

Supply Chain Management Seminar at Bangalore

Dec. 6, 2003

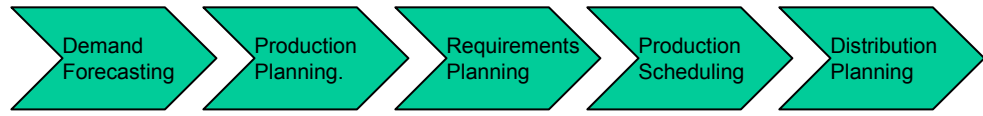
Collaboration Synergies within the Firm

Dr. P. Balasubramanian

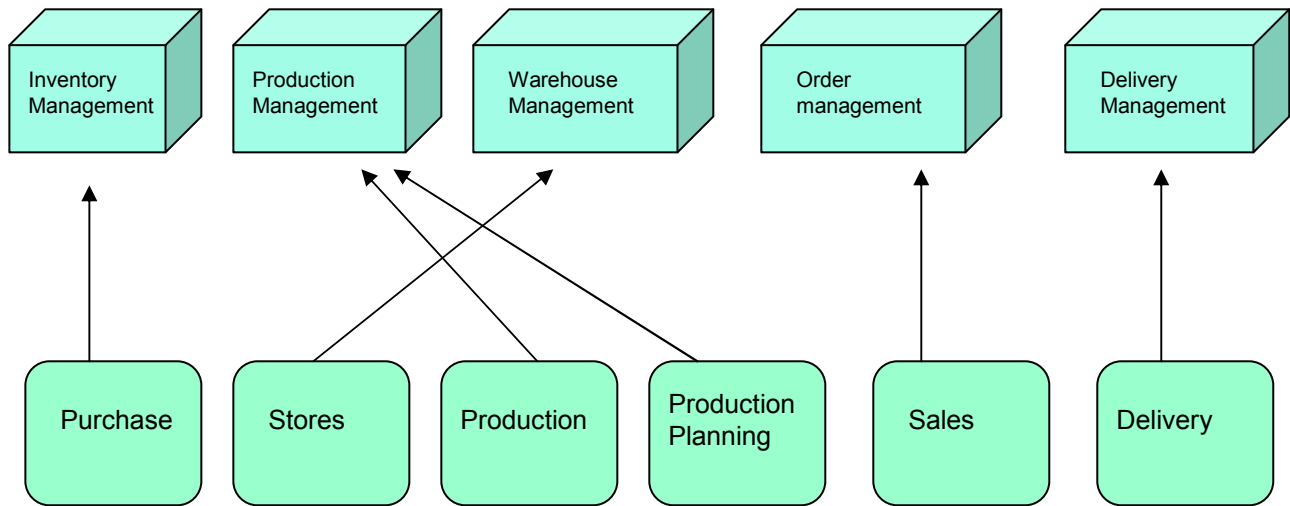
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Who is minding the Store ?



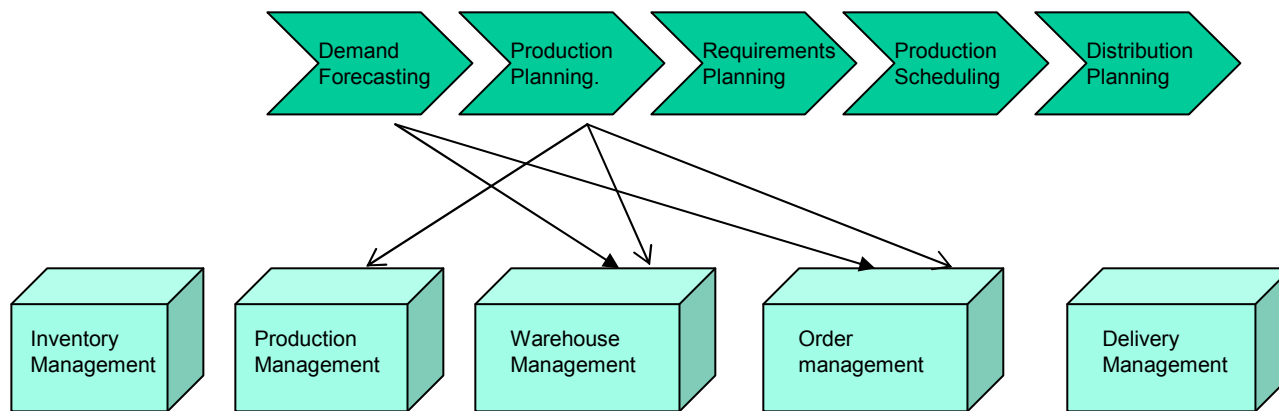
Planning functions



Execution Management

Functional Departments

Who is minding the Store ?



Planning
functions

Execution
Management

Supply Chain Management

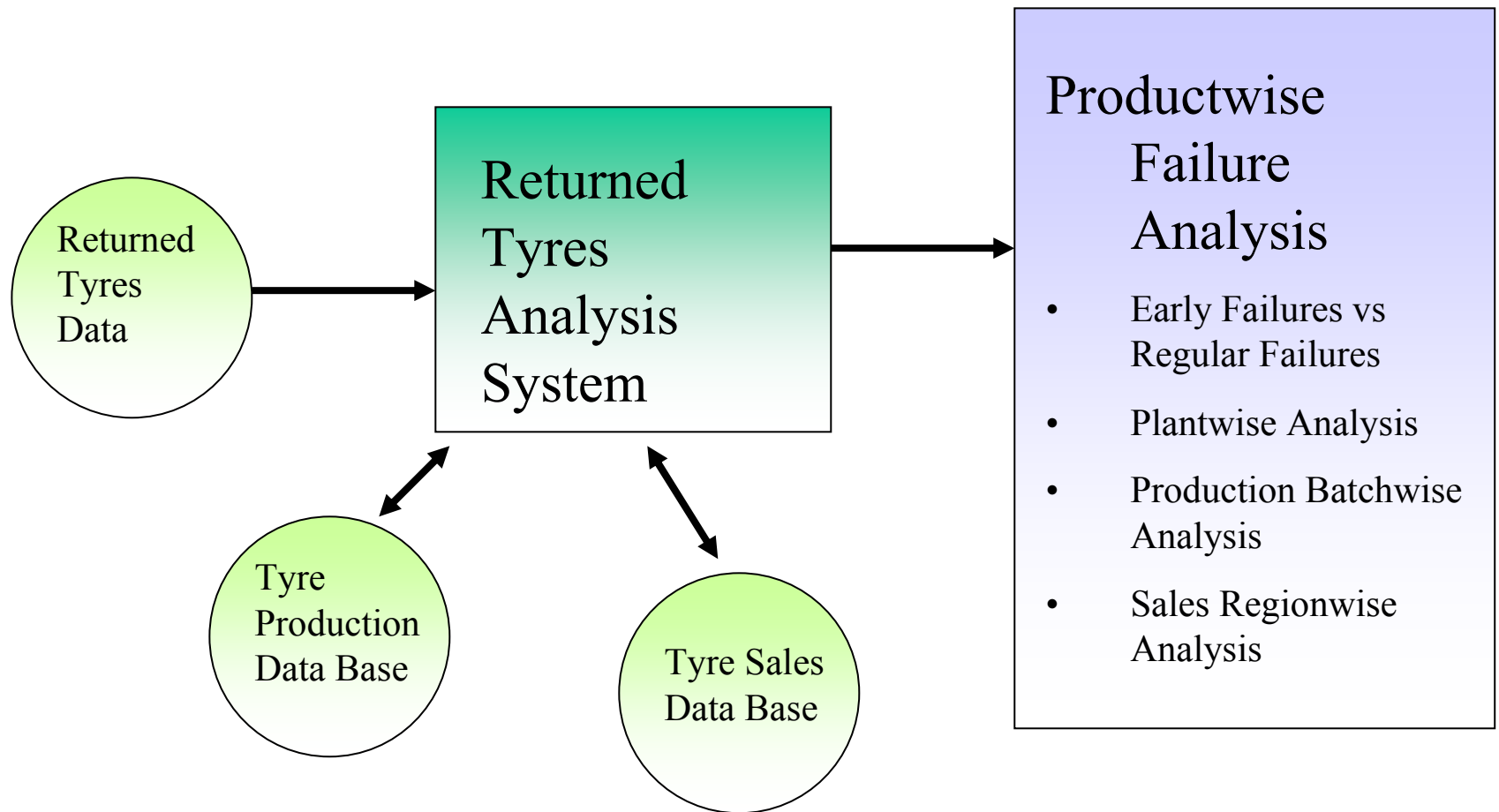
- The Supply Chain Management function then calls for integrating the functional silos of a traditional organization to create a seamless interface with the Customer to satisfy the demand.

Achieving functional excellence

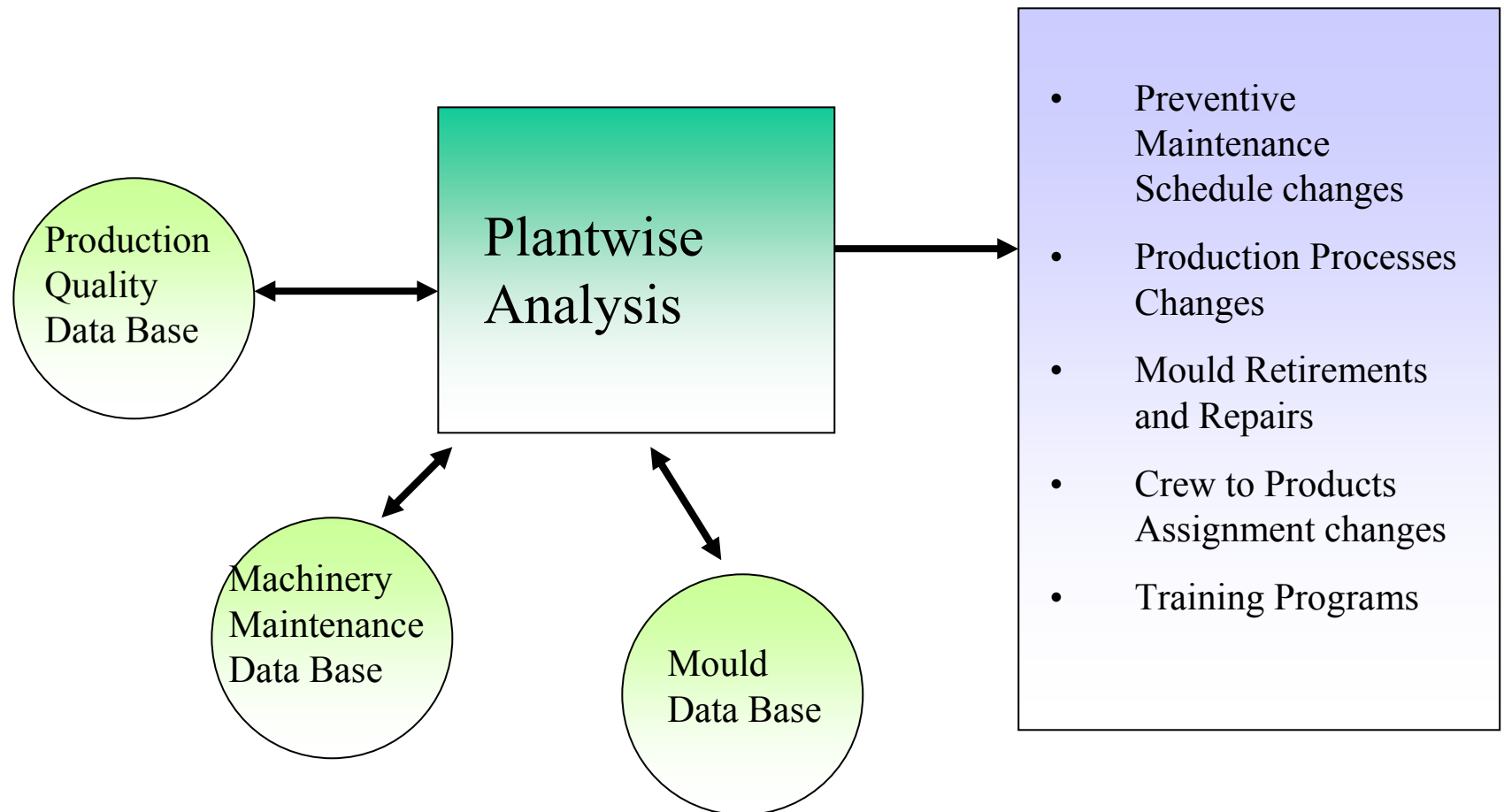
How does sharing of information between functional units lead to higher level of effectiveness at each dept ?

A case study from a multi plant and multi product tyre company

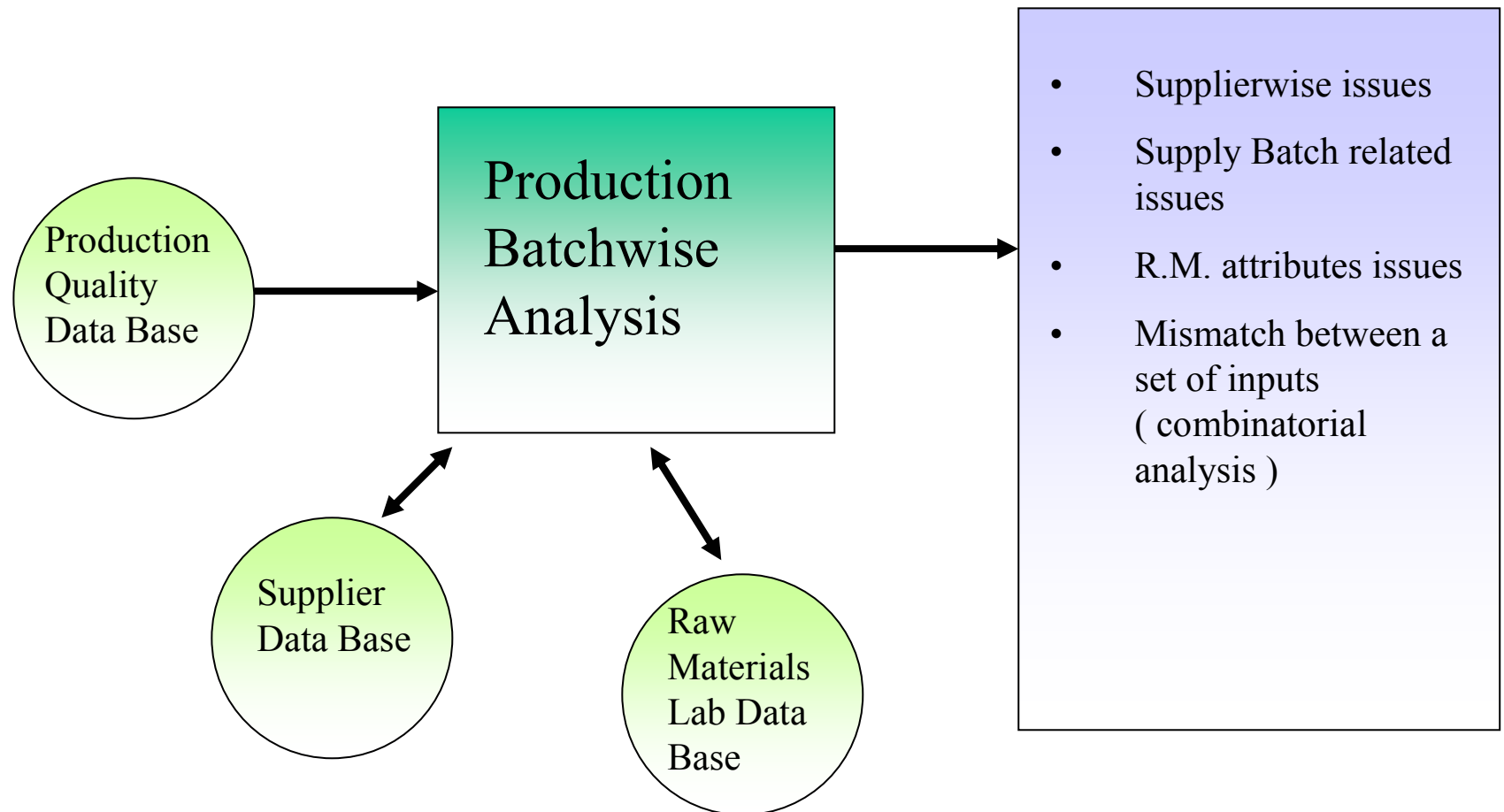
- Returned Tyres Analysis : An illustration



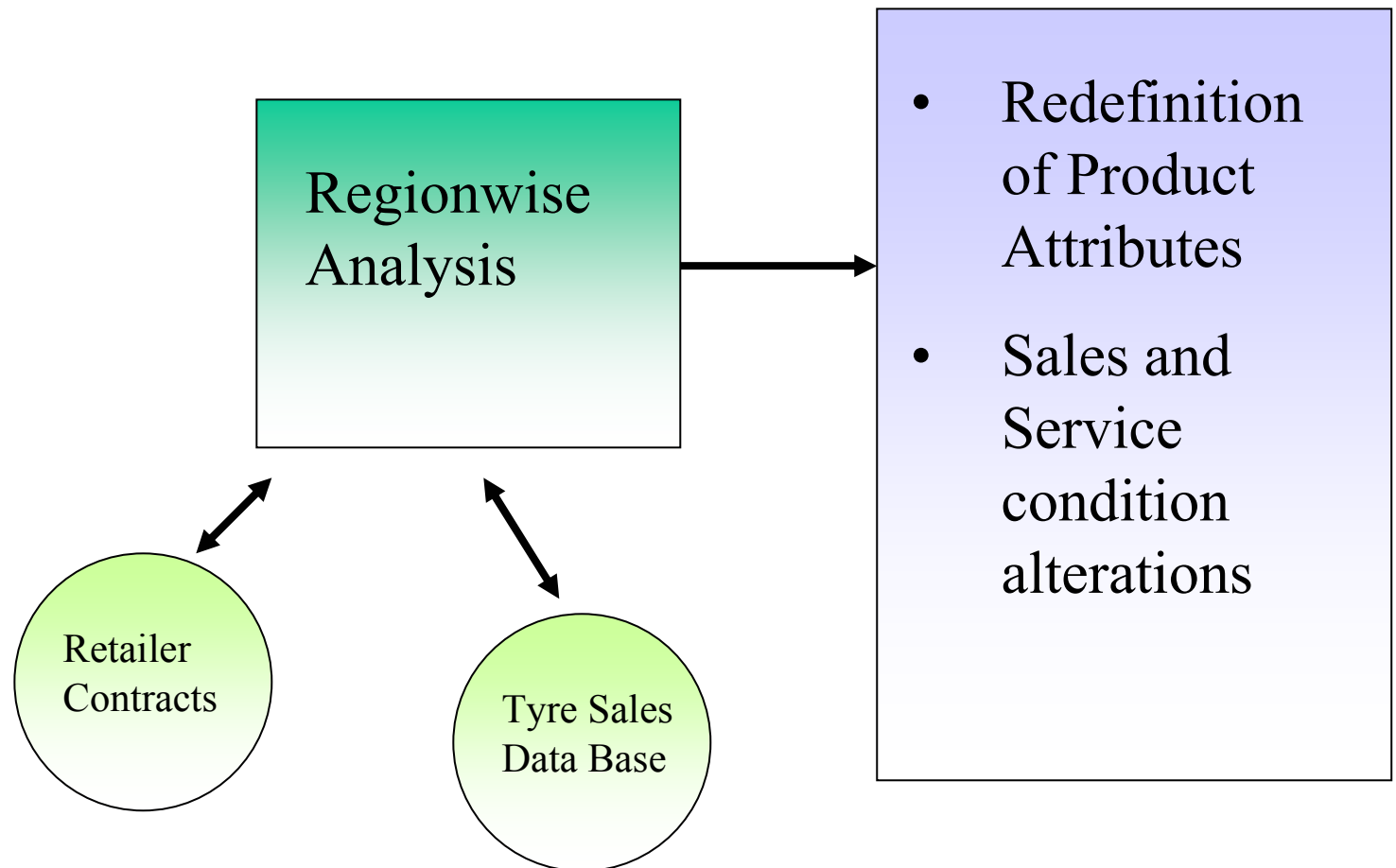
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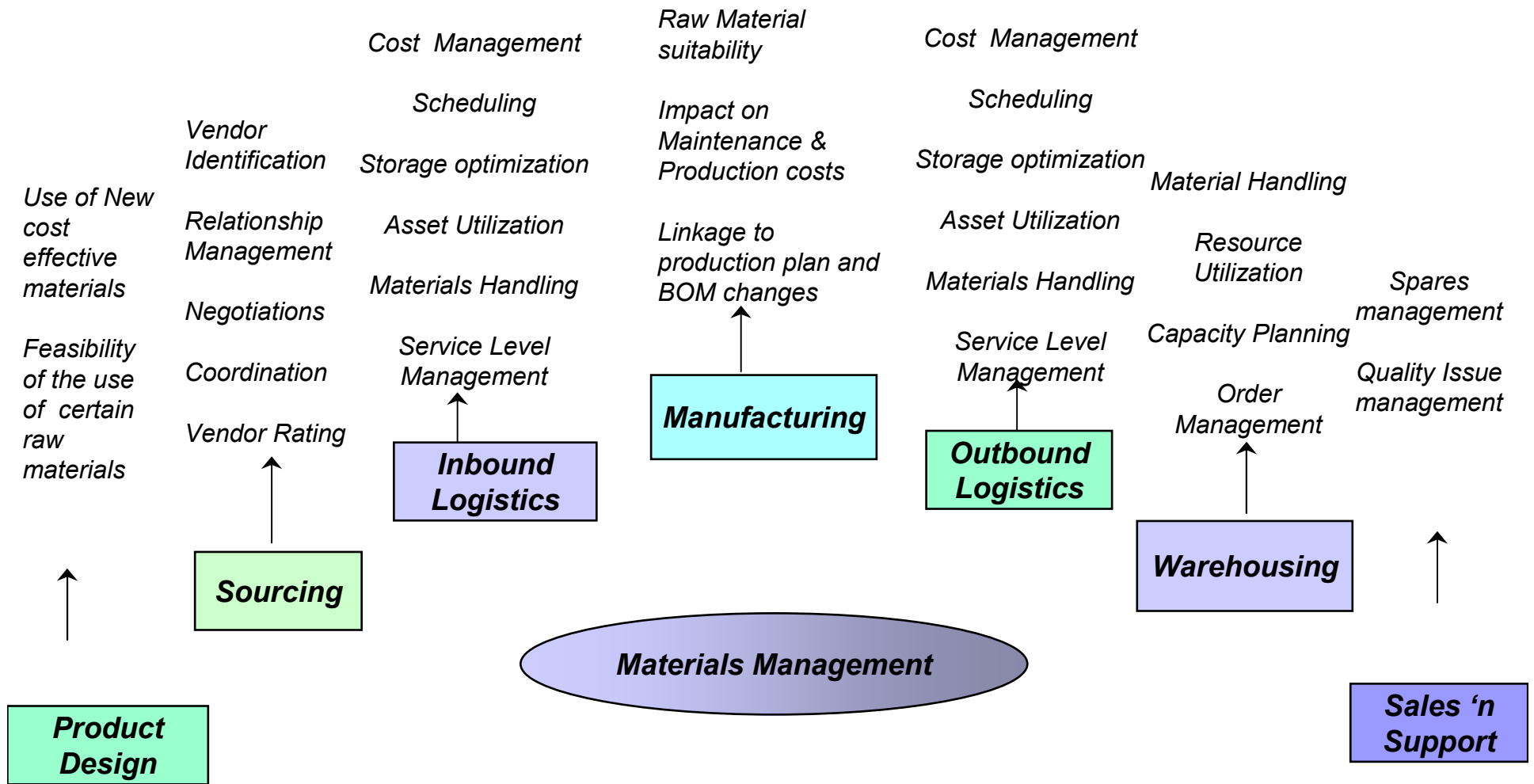


Beyond Returned Tyres ... Information available in one dept but needed in other places.

- Customer Satisfaction
- Product Performance
- Performance during warranty period
- Sales Returns
- Usage Variance
- Product Profitability

- Machinery capacity available in current period
- Manpower availability
- Preventive Maintenance Schedule
- Production Constraints

- Raw materials and consumables inventory; on hand and in pipeline
- Supplier issues
- Lead time issues
- Transportation constraints
- Alternate sources and materials



The Dimensions of Materials Management

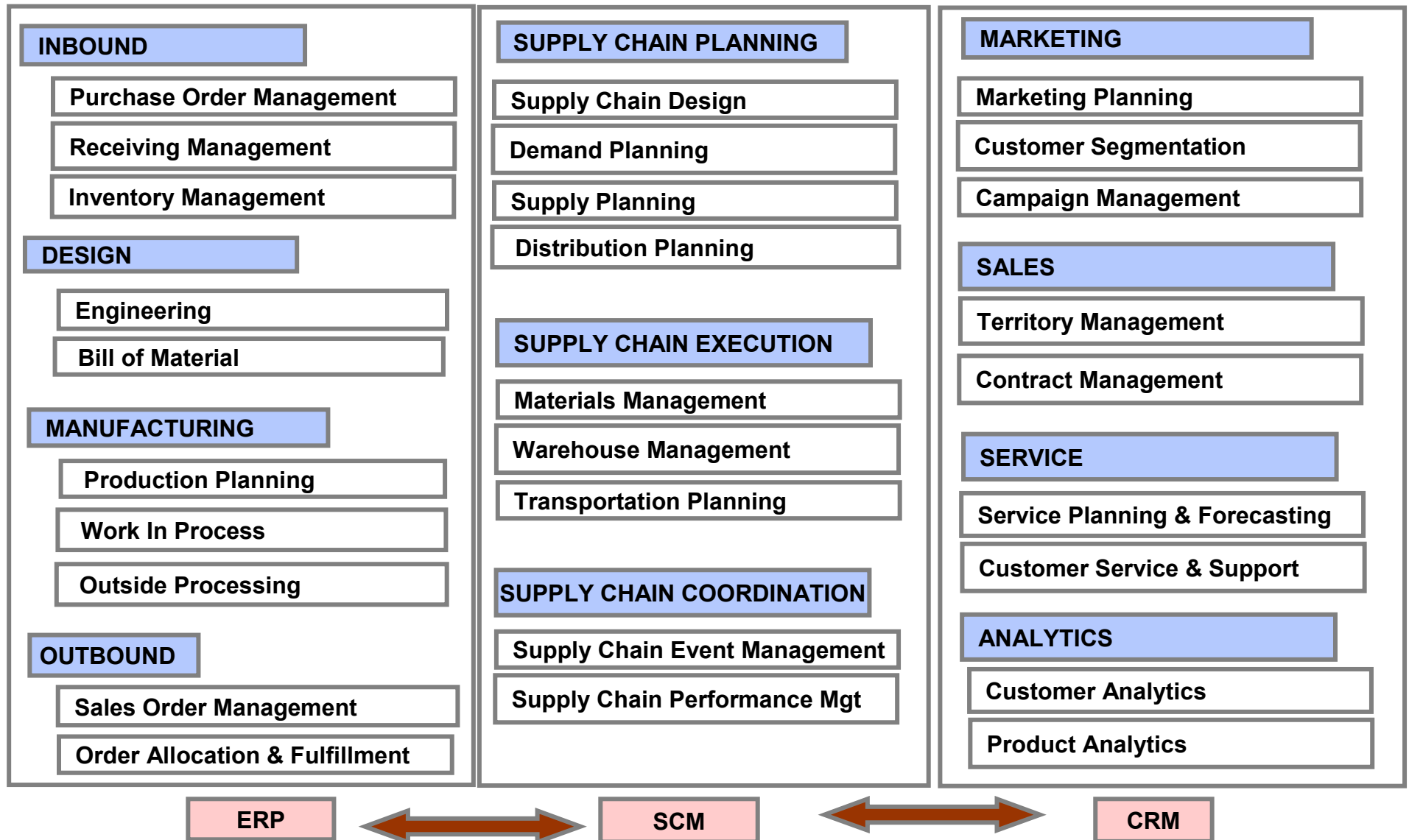
Challenges Faced by the Materials Manager

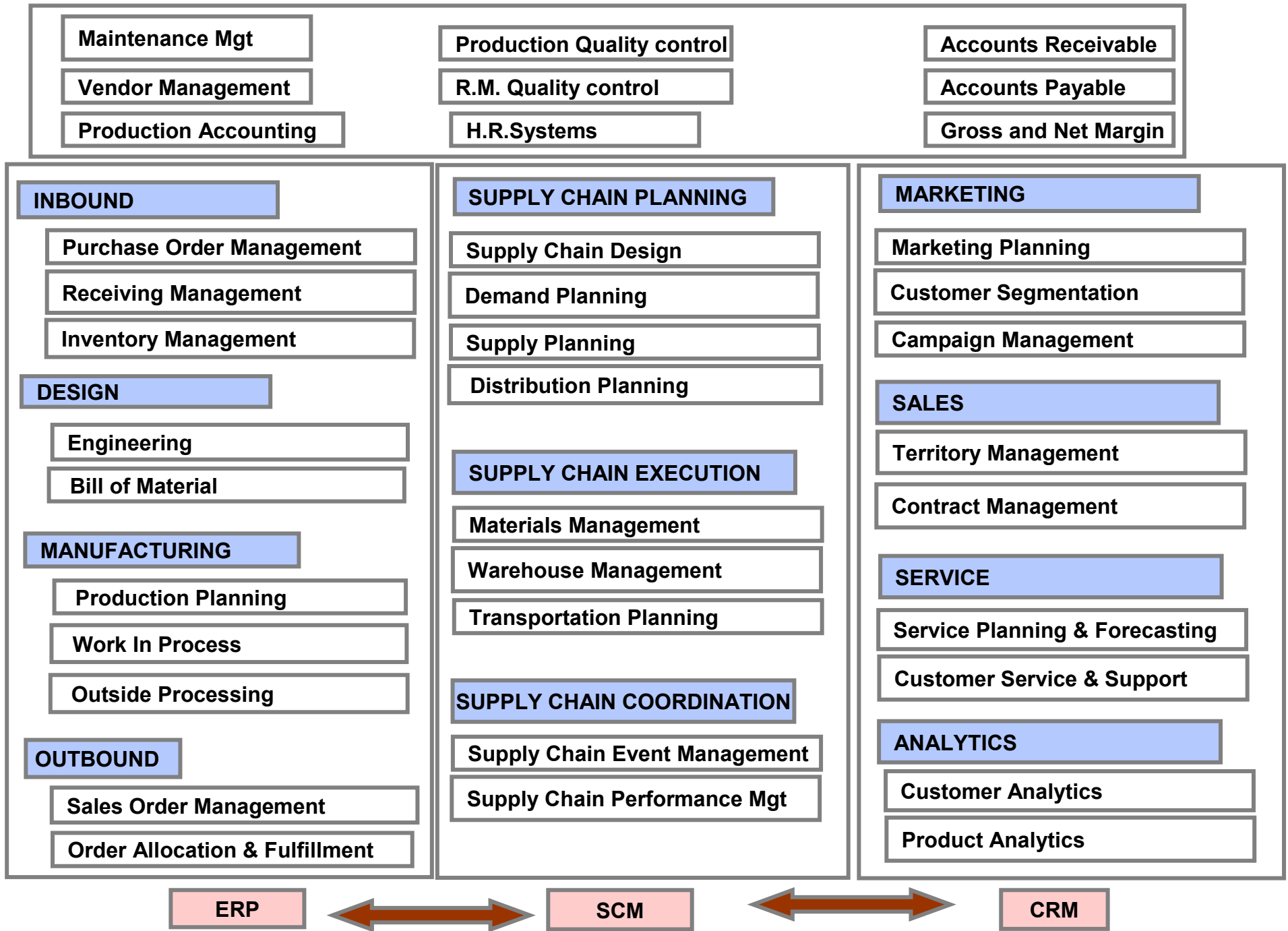
- **Product Design**
 - Visibility and collaboration with the R&D team
 - Access to information on potential substitutes
- **Sourcing**
 - Variation in FG Demand
 - Visibility to supply constraints with the vendors
 - Import & Regulatory Issues
 - Competitive pricing
 - Secure & quick payment mechanisms
- **Inbound/Outbound logistics**
 - Visibility to critical consignment status
 - Access to dispatch and expected delivery date information
 - Customs, Excise and regulatory requirements
 - Information on market opportunities (back-freighting)

Challenges Faced by the Materials Manager

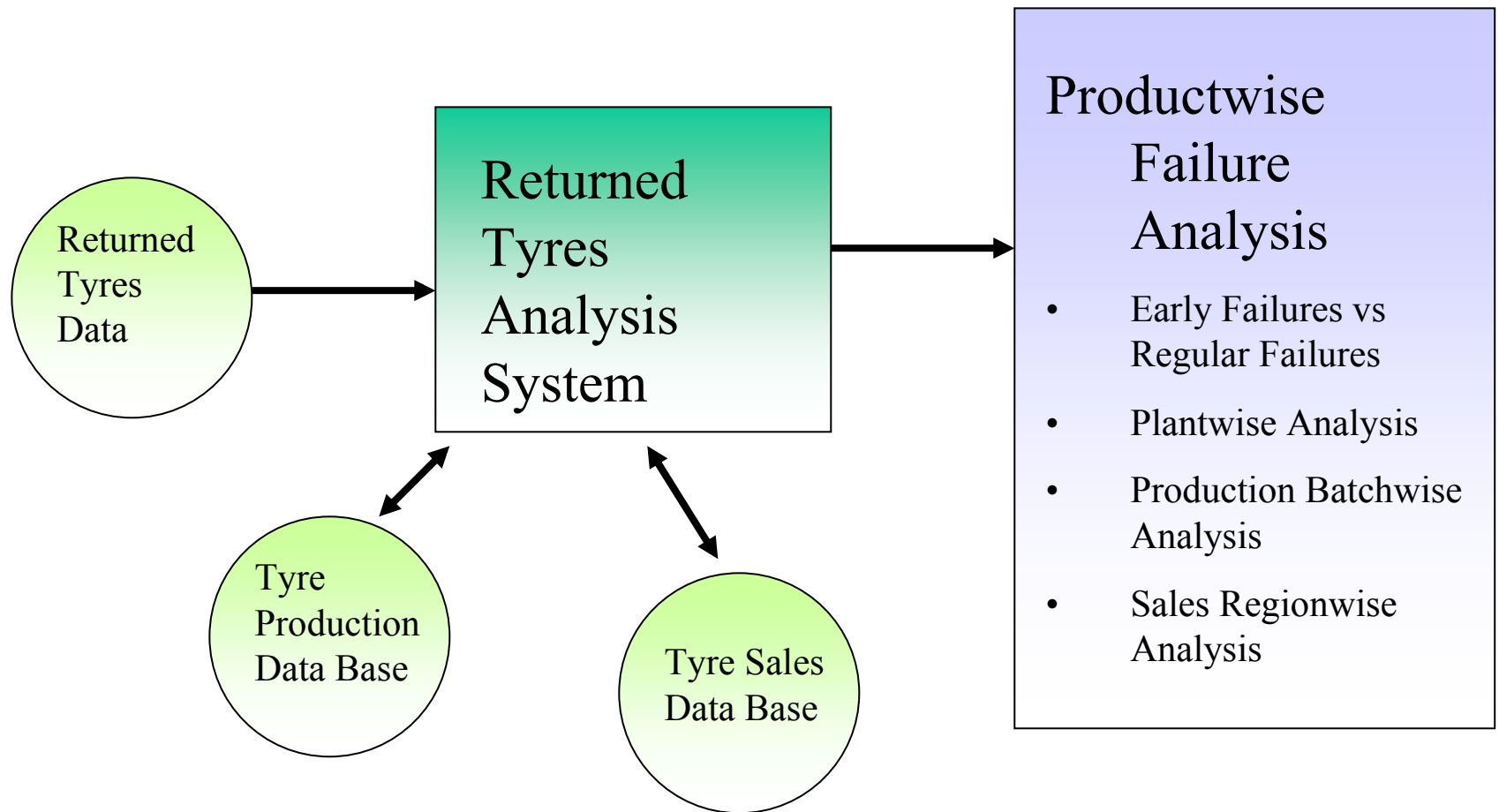
- **Manufacturing**
 - Visibility into total cost of raw material usage
 - Variability on production plans
- **Warehousing**
 - Inventory age views for limited shelf life items
 - Access to correct inventory position (quick cycle counts)
 - Knowledge about new material handling systems & practices
- **Sales and Support**
 - Availability of warranty cause and effect analysis
 - Visibility into spares requirement

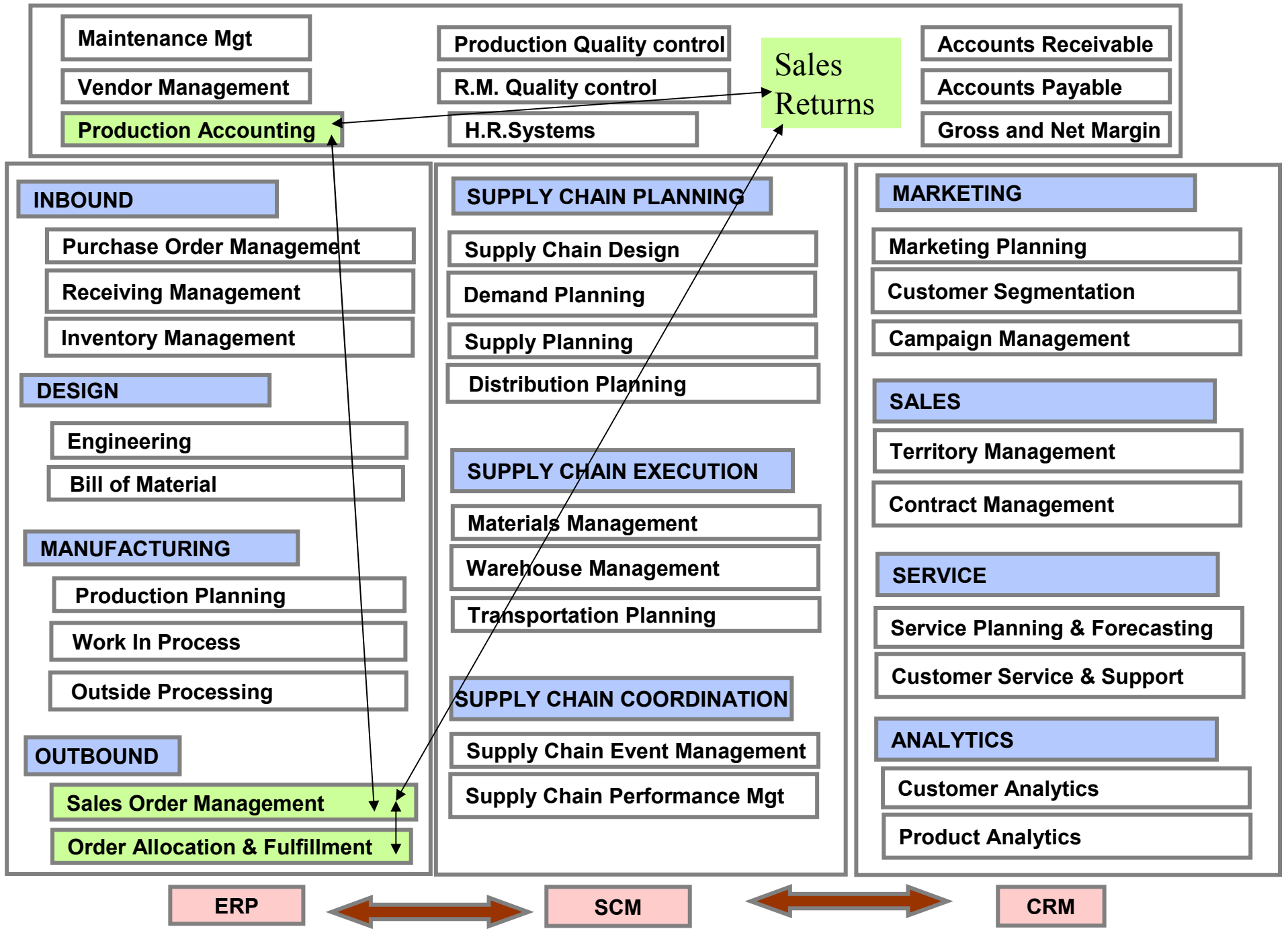
Modules in ERP-SCM-CRM



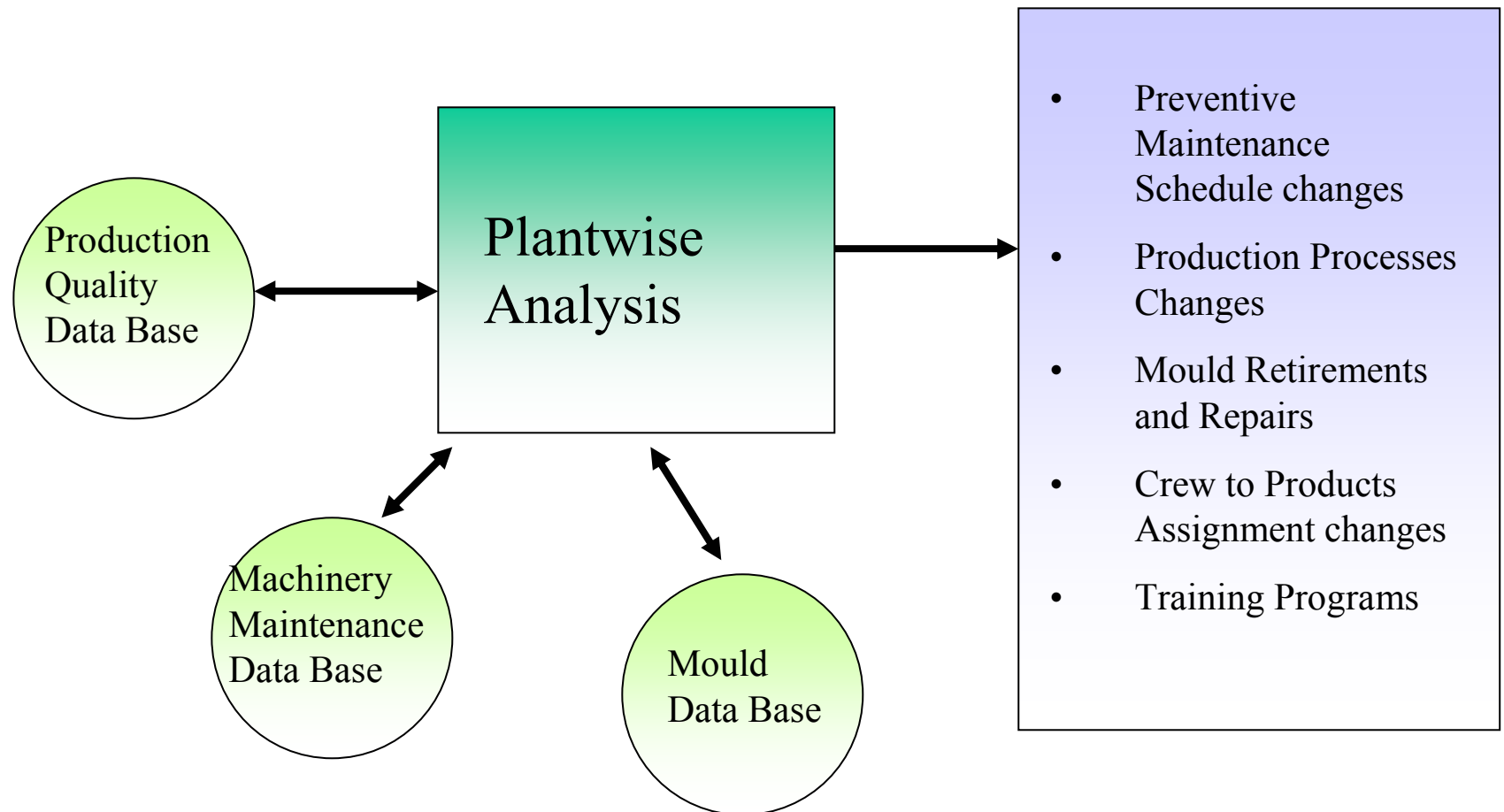


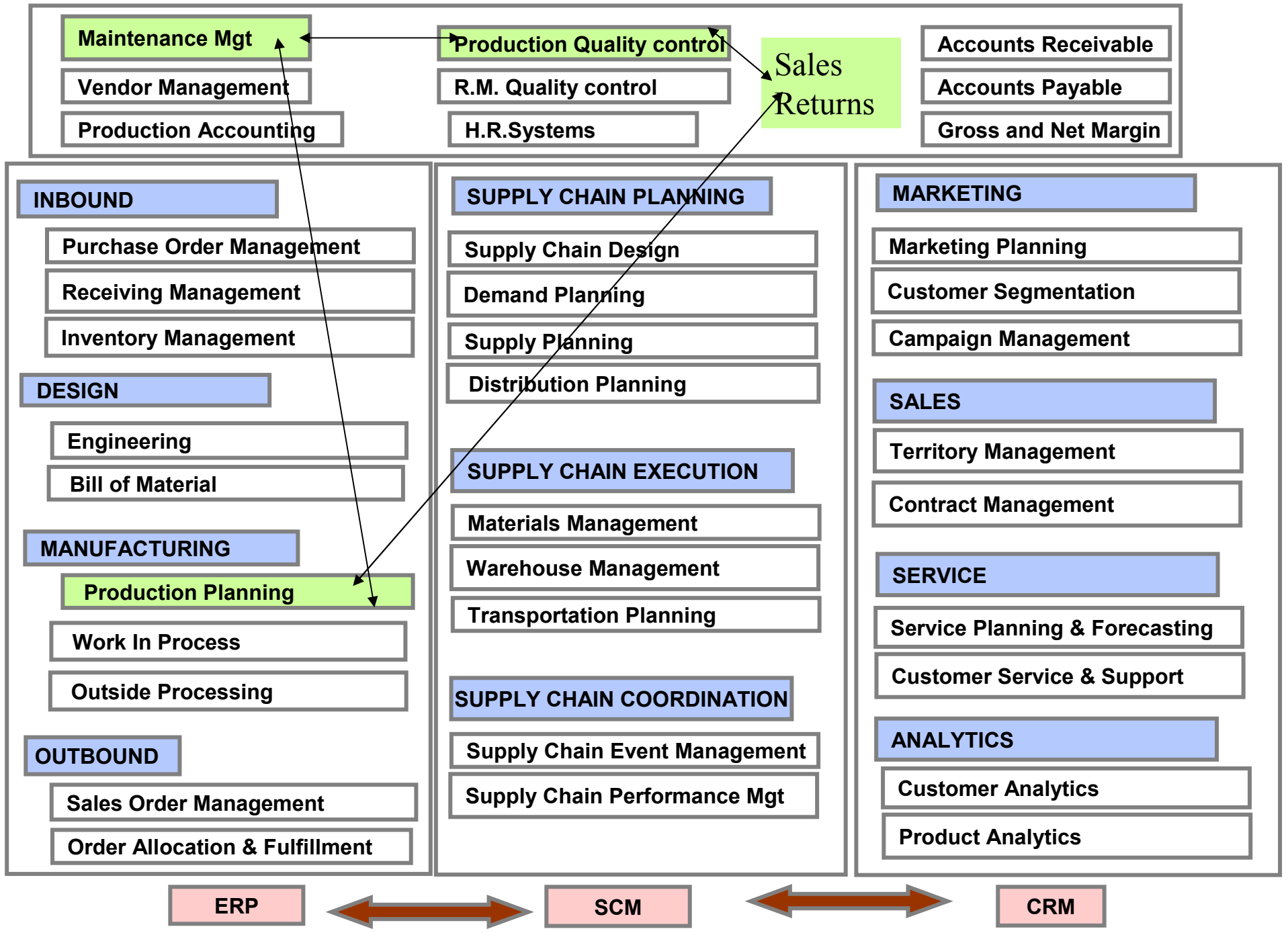
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Maintenance Mgt

Vendor Management

Production Accounting

Production Quality control

R.M. Quality control

H.R. Systems

Sales Returns

Accounts Receivable

Accounts Payable

Gross and Net Margin

INBOUND

Purchase Order Management

Receiving Management

Inventory Management

DESIGN

Engineering

Bill of Material

MANUFACTURING

Production Planning

Work In Process

Outside Processing

OUTBOUND

Sales Order Management

Order Allocation & Fulfillment

SUPPLY CHAIN PLANNING

Supply Chain Design

Demand Planning

Supply Planning

Distribution Planning

SUPPLY CHAIN EXECUTION

Materials Management

Warehouse Management

Transportation Planning

SUPPLY CHAIN COORDINATION

Supply Chain Event Management

Supply Chain Performance Mgt

MARKETING

Marketing Planning

Customer Segmentation

Campaign Management

SALES

Territory Management

Contract Management

SERVICE

Service Planning & Forecasting

Customer Service & Support

ANALYTICS

Customer Analytics

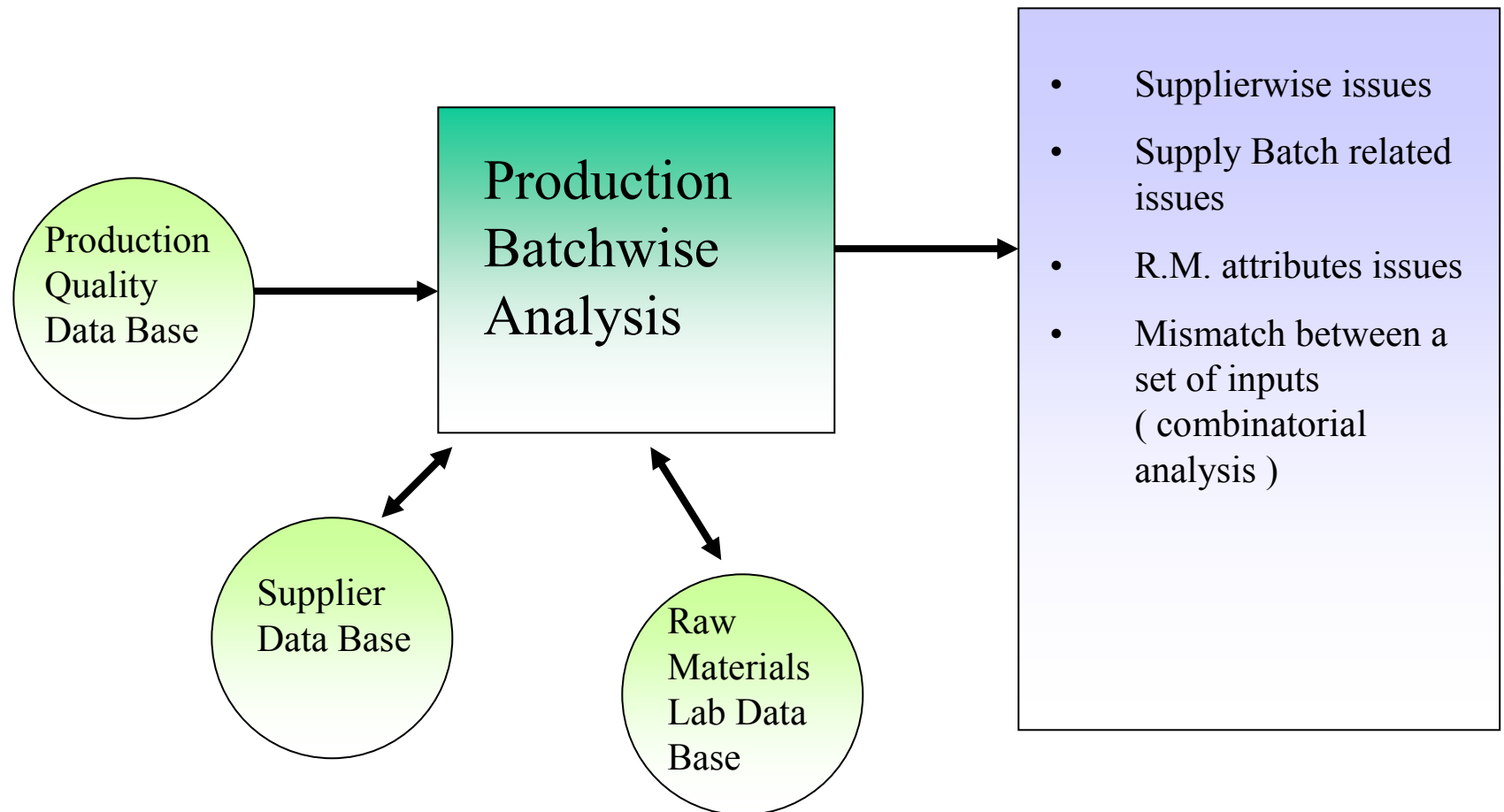
Product Analytics

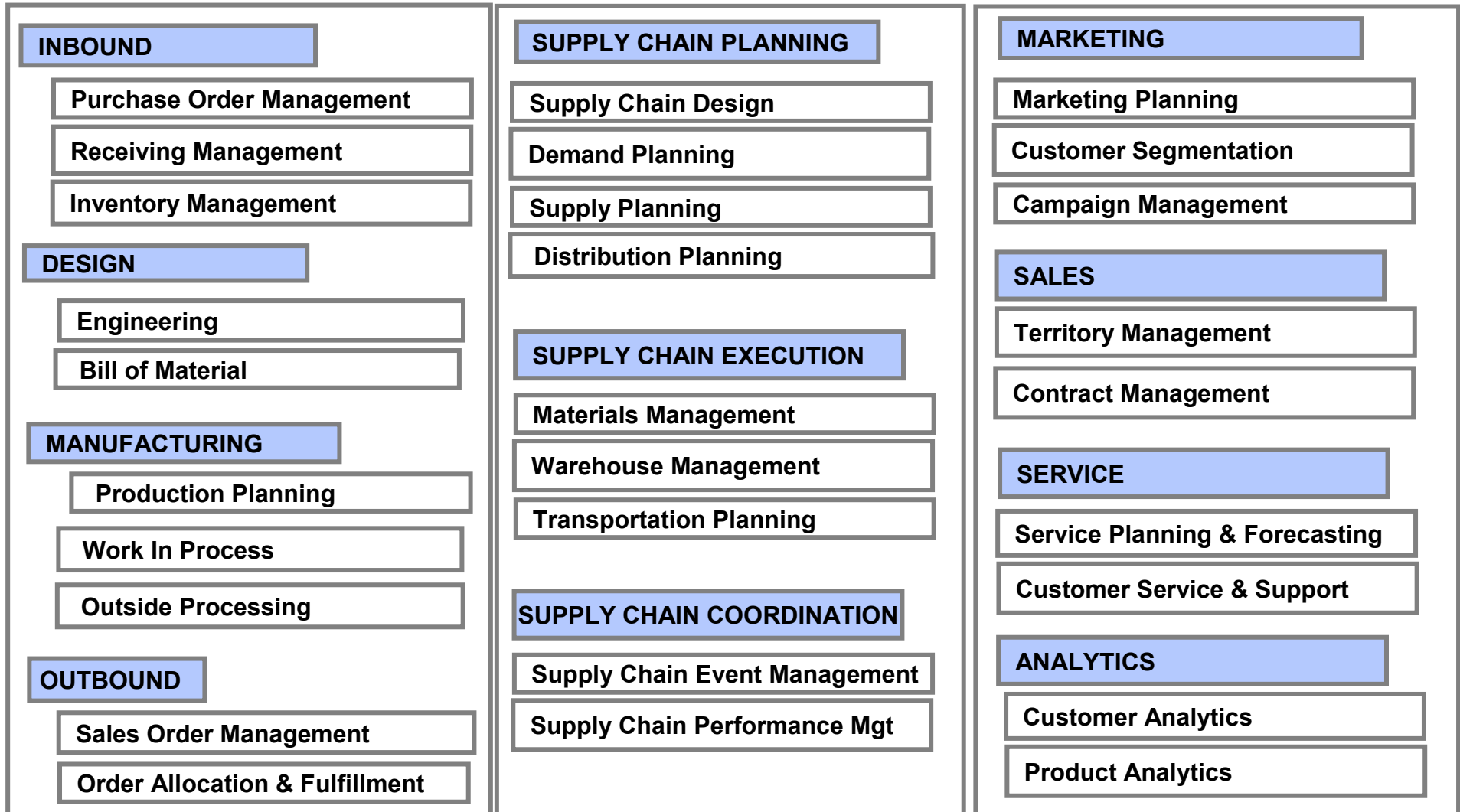
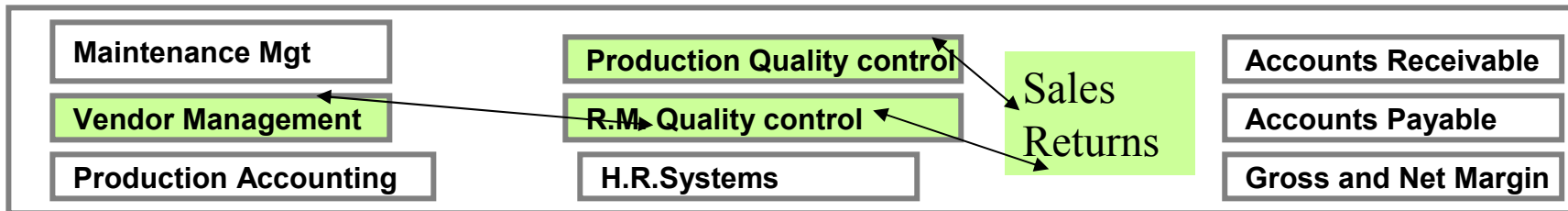
ERP

SCM

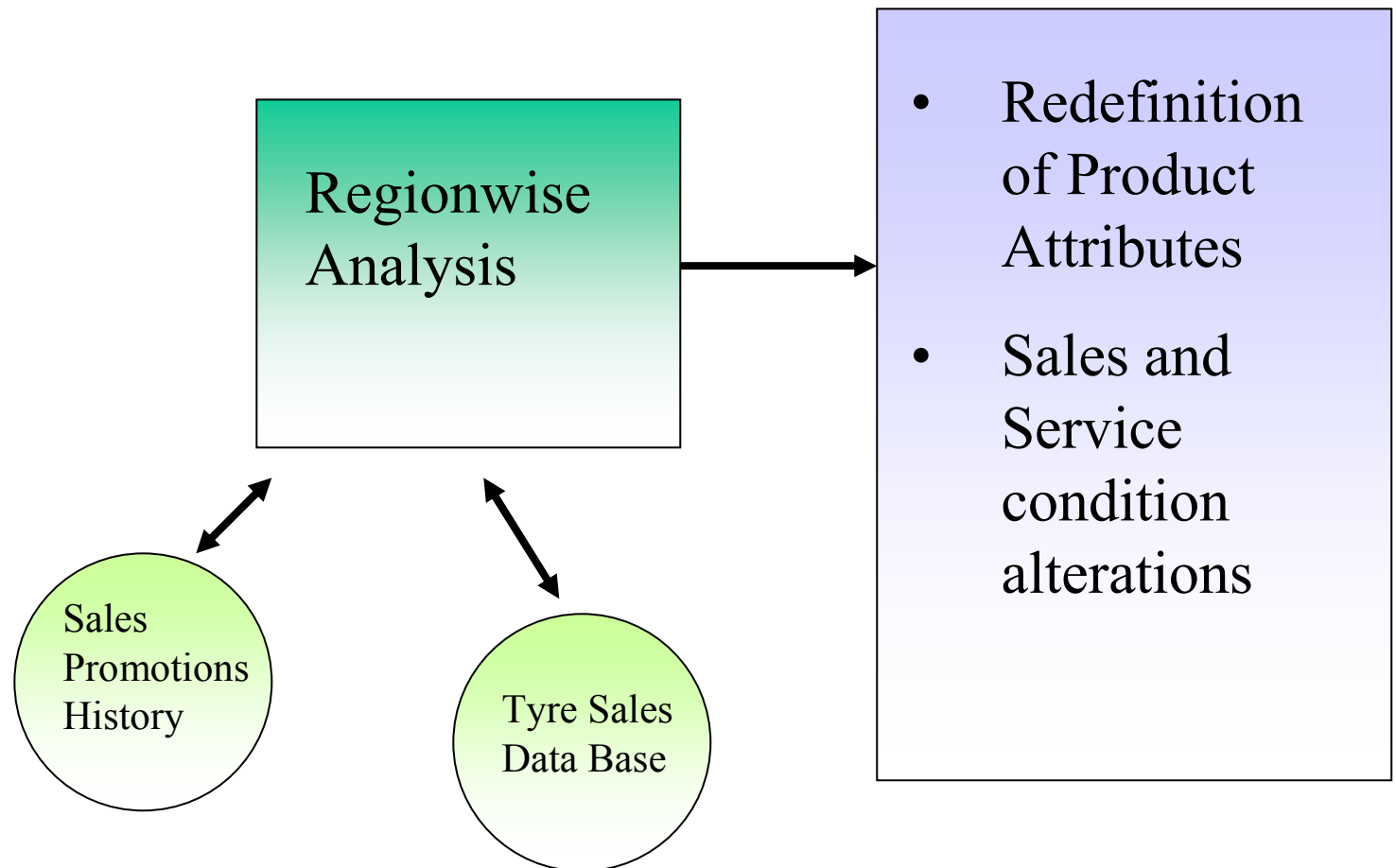
CRM

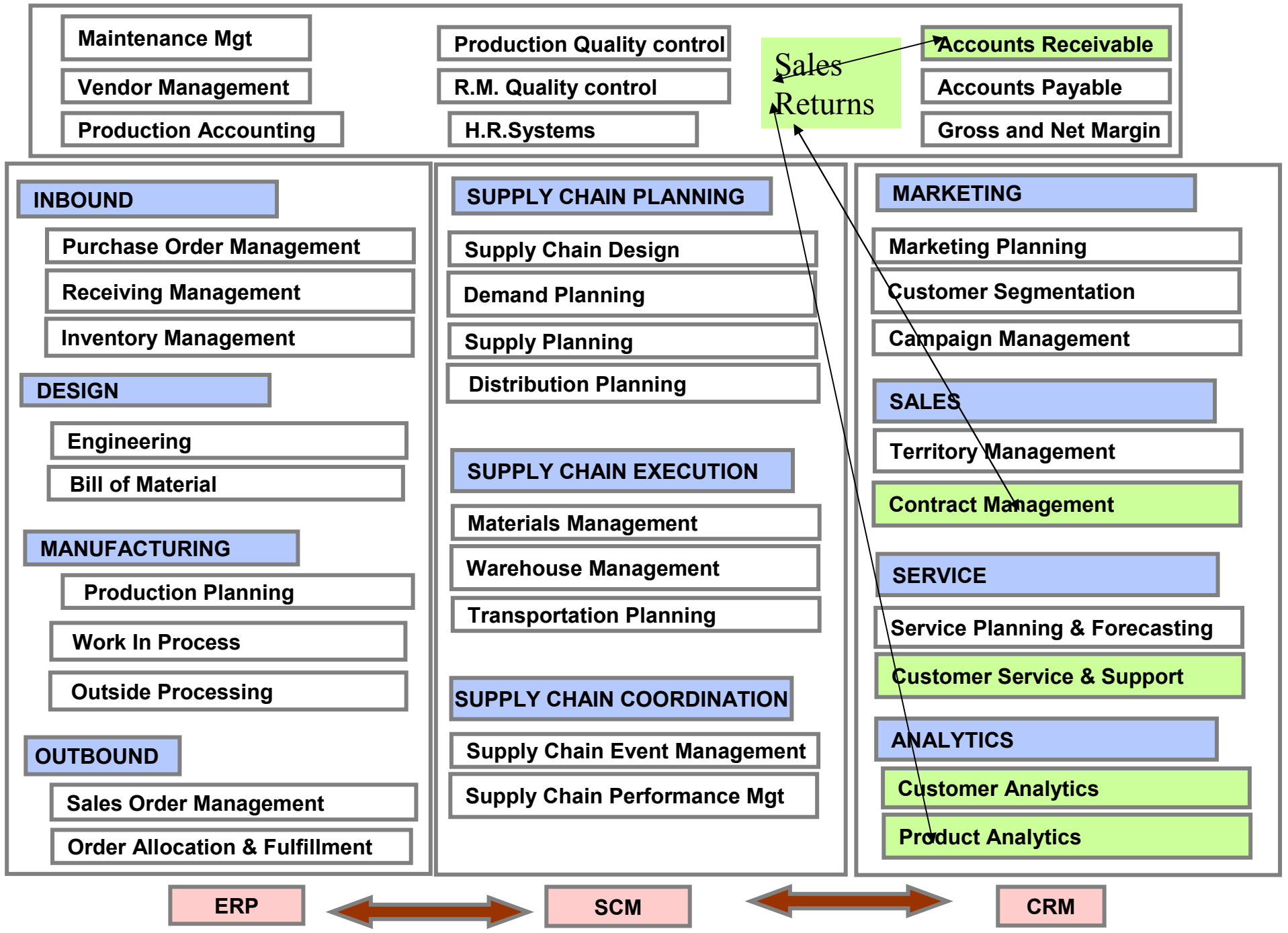
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Achieving supply chain effectiveness

How does information pooling by all functional units (*and willingness to collaborate while deciding*) lead to higher level of operational effectiveness for the firm ?

A case study from a multi plant and multi product company

Supply Chain Management

Multiple markets to serve

M1

M5

M3

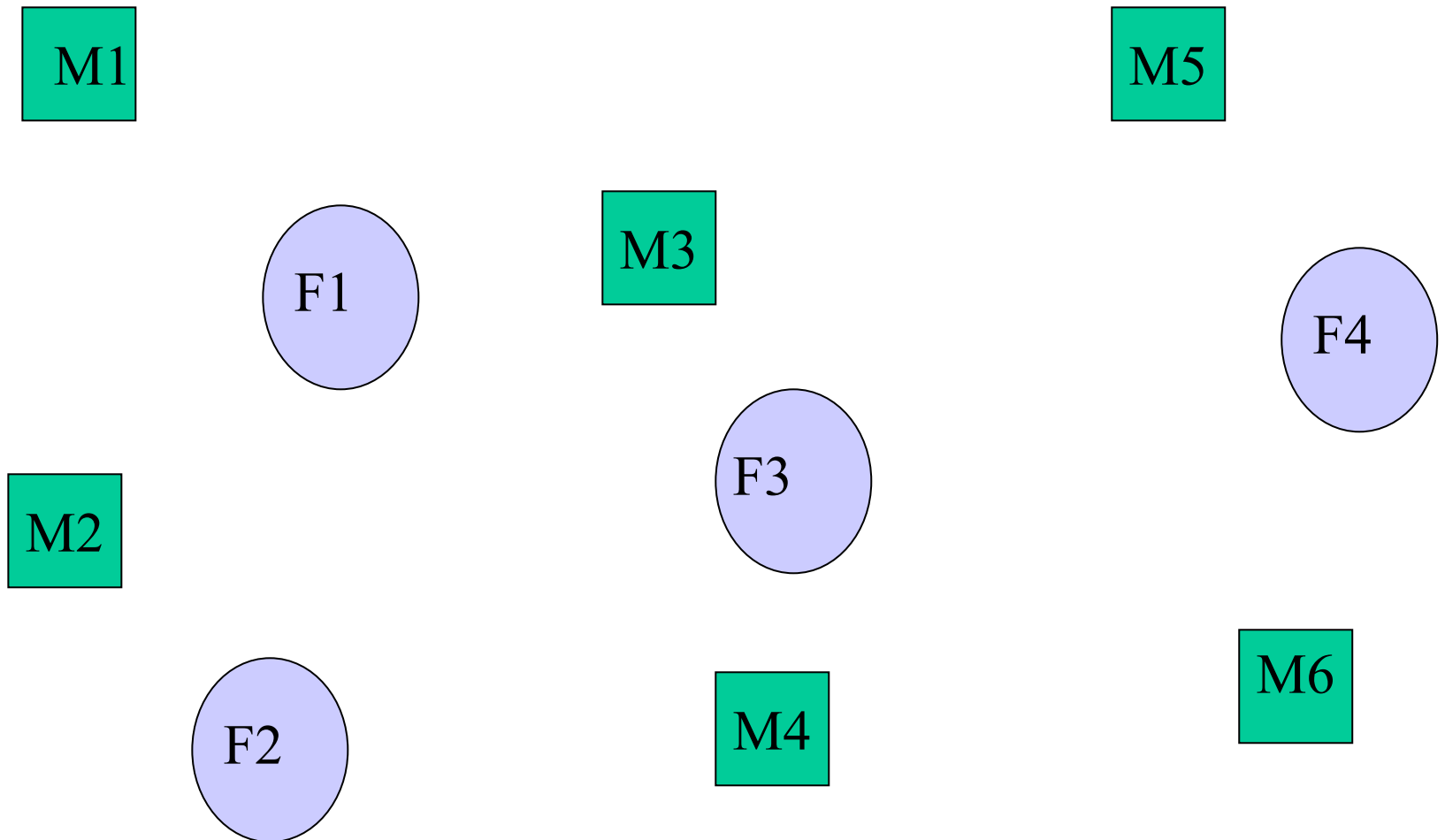
M2

M4

M6

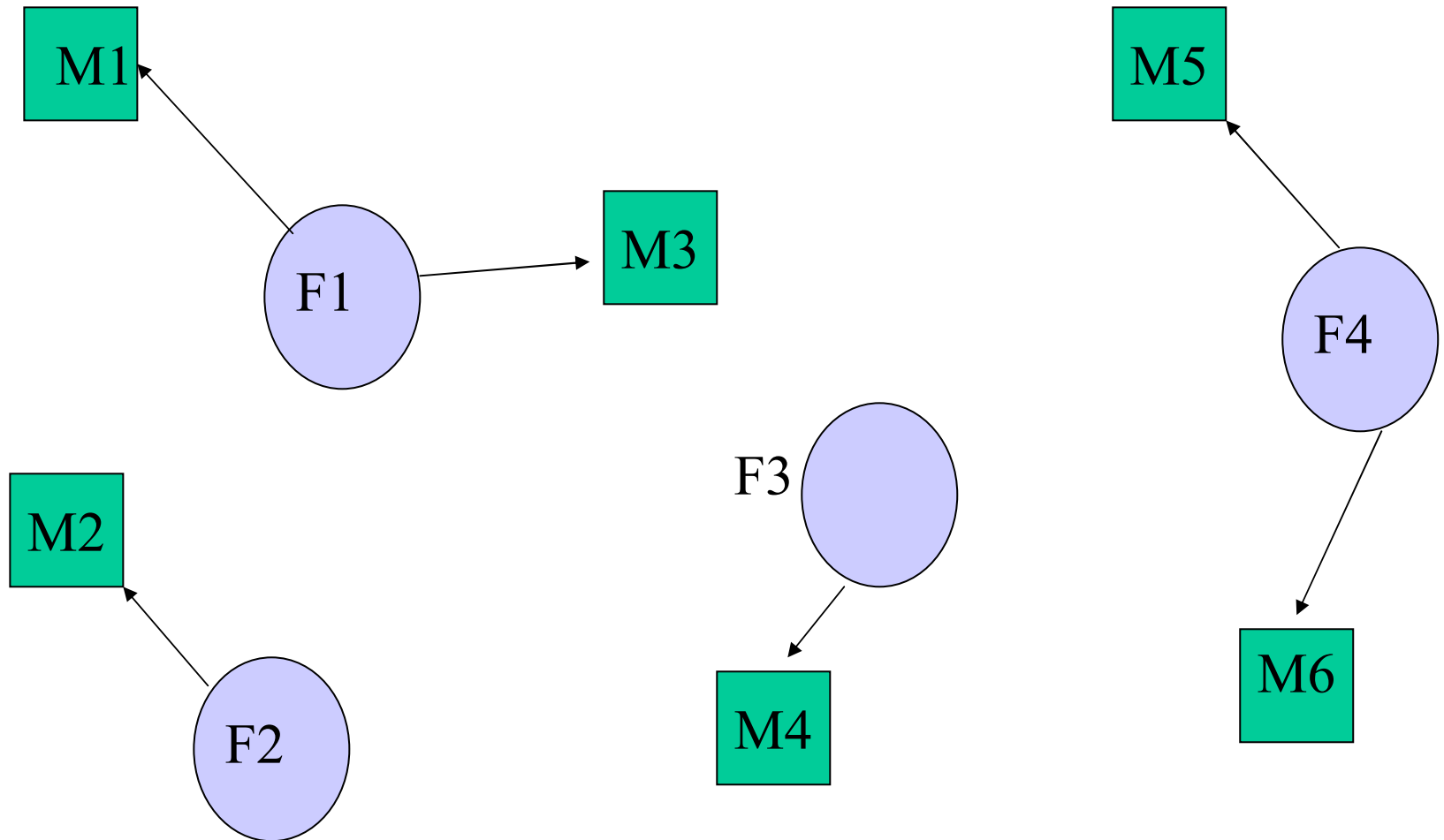
Supply Chain Management

Multiple markets to serve.
Multiple factories.



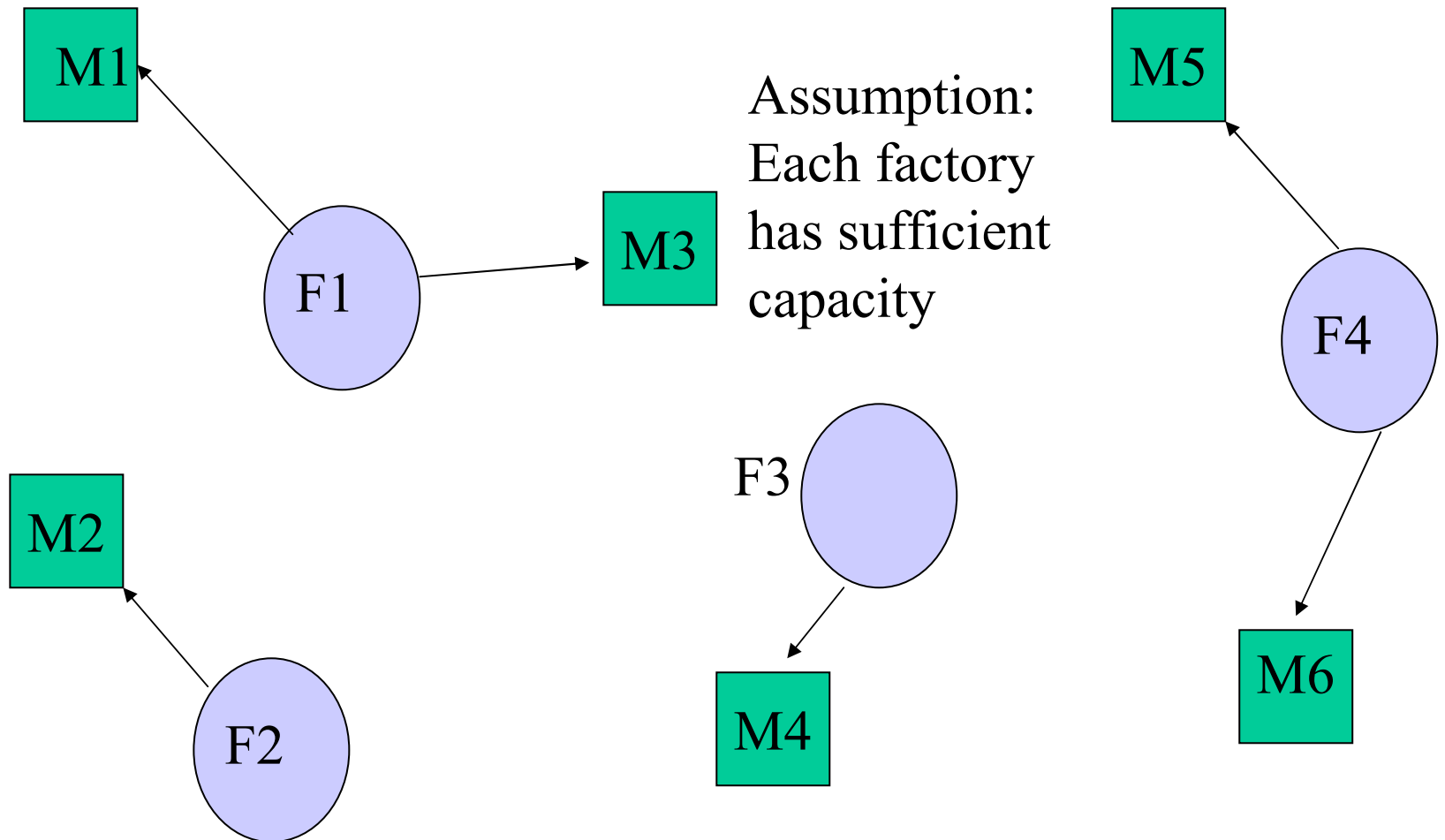
If cost of production is same at each factory and if unit cost of transportation is same ,then a factory supplies to the nearest market

Multiple markets to serve.
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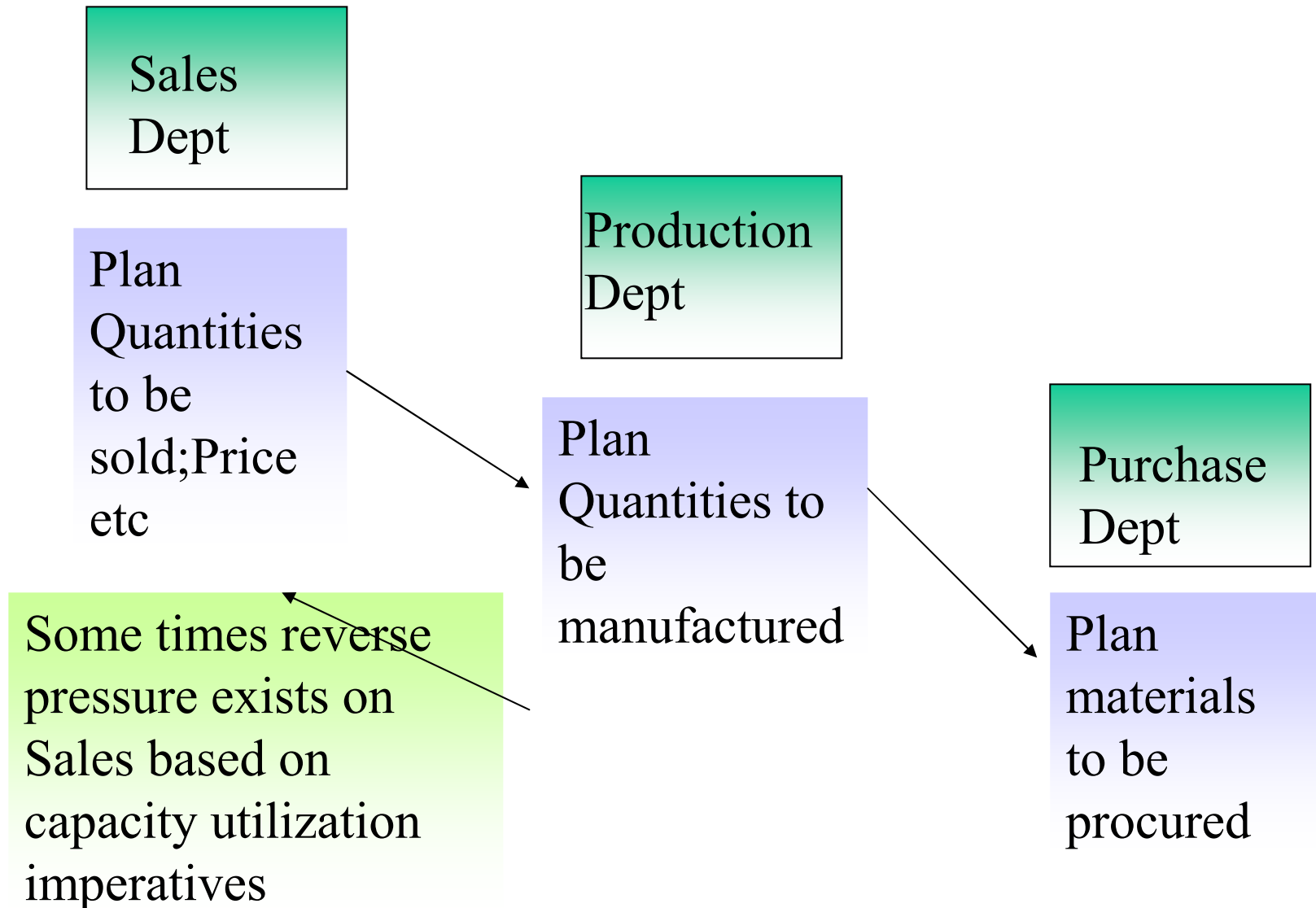
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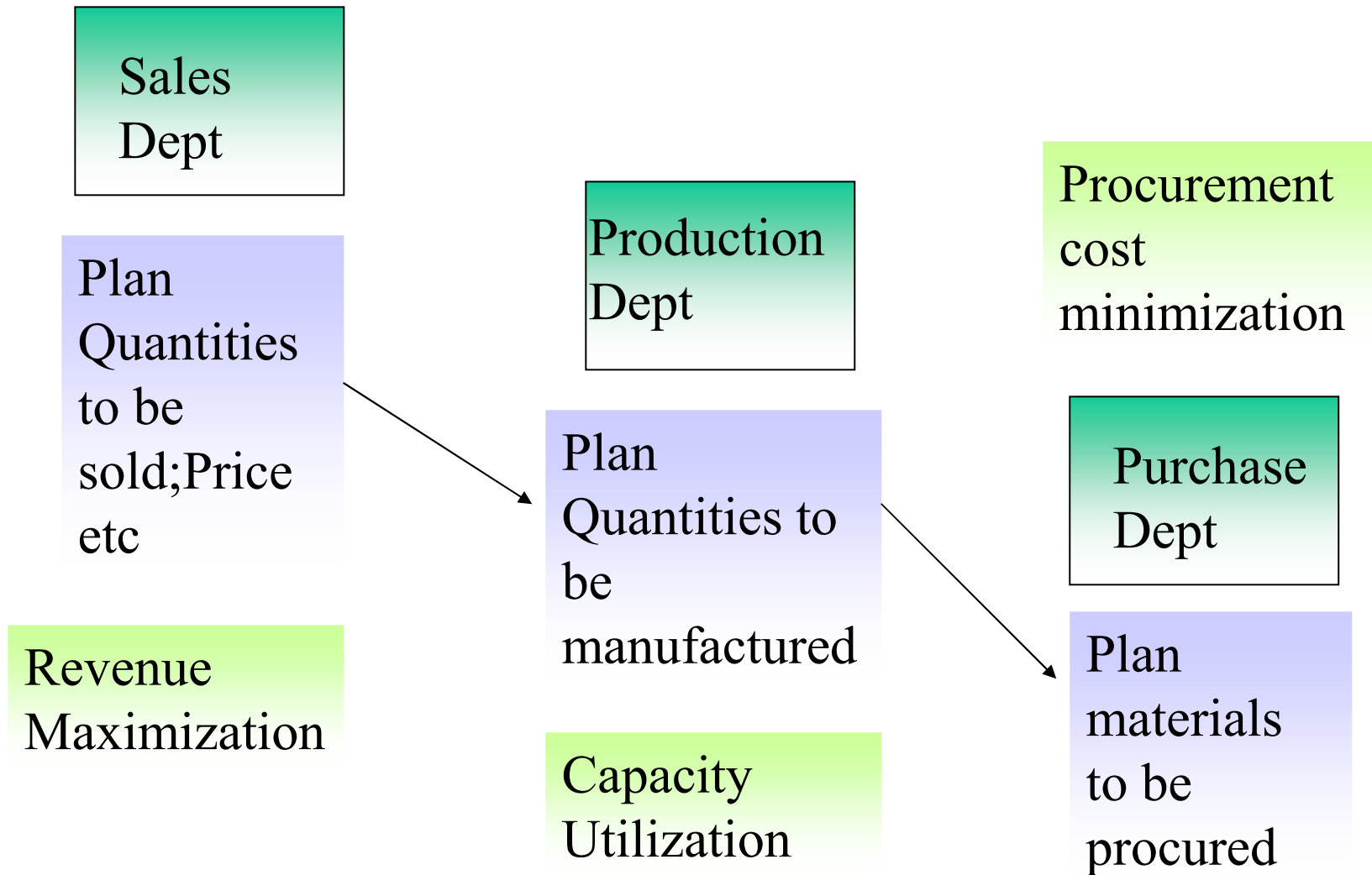
Real world issues

- Cost of production varies
- Unit cost of transportation may vary.
- Plant capacities are fixed .
- Selling price may vary from market to market
- Warranty, after sales service, credit terms etc can vary from market to market
- Net result is that Net Margins may vary fro market to market
- Above all, plant capacity is shared by multiple products
- Plants and markets can be in multiple countries too!

Traditional way of working



Traditional way of working



New Paradigm

Sales
Dept

Purchase
Dept

Productwise
demand at
each market

Maximize Net margin by

- Deciding on optimal product mix at each plant
- Deciding on which plant should supply which product to which market
- Taking into account procurement cost , transportation costs and other costs

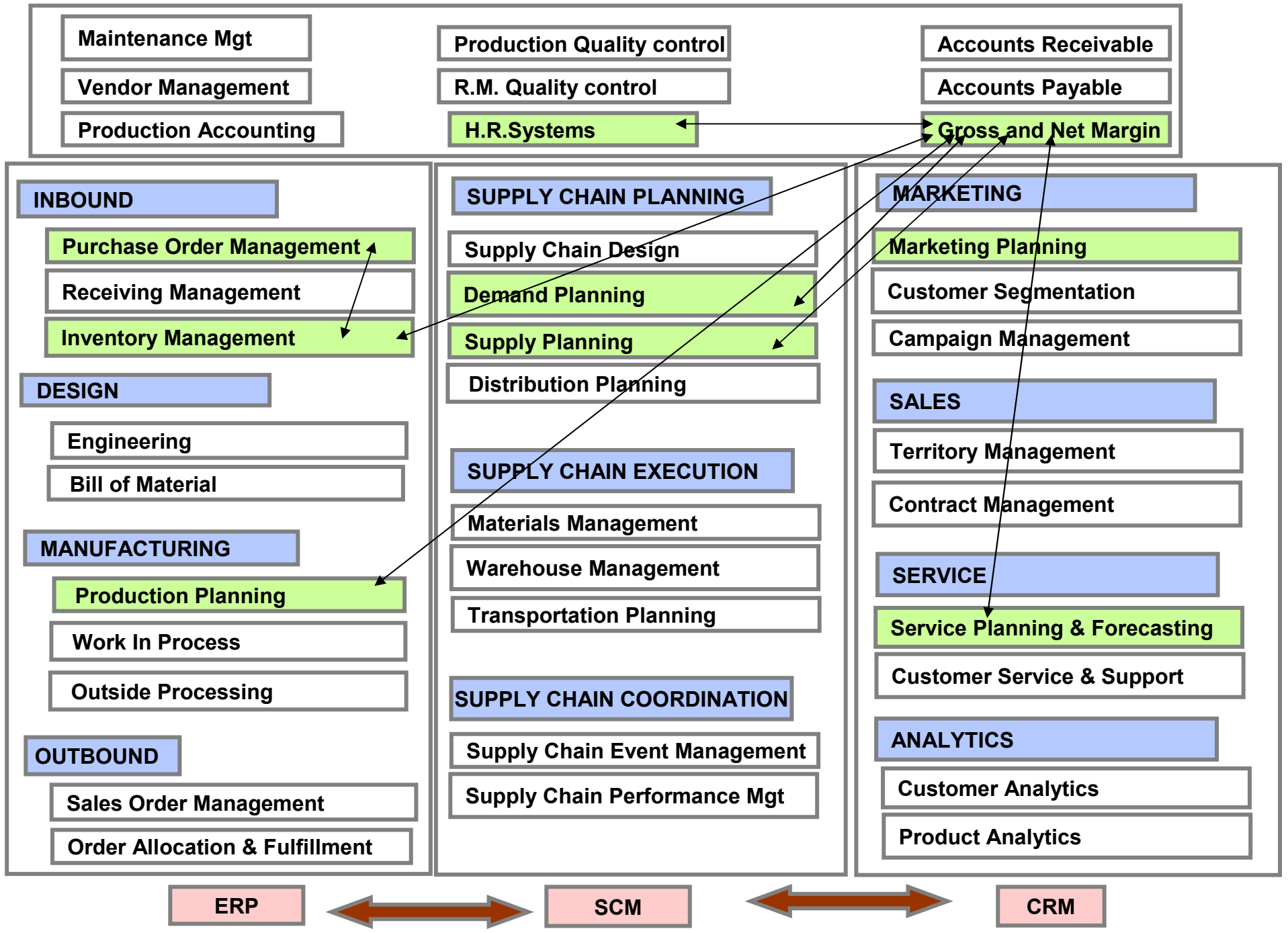
Supply
constraints

Capacity
information

Productwise
net margins at
each market

Manufac
turing
Dept

Finance
Dept



New Paradigm provides for...

- Information sharing without dilution of control ,visibility or ownership
- Optimal decisions for the SC as a whole
- Swift modification of decisions with the assurance that all impacts are considered



- **The SCC is an independent, not-for-profit, global corporation with membership open to all companies and organizations interested in applying and advancing state-of-the-art supply chain management systems and practices.**
 - **Over 800 Company Members**
 - **Cross-industry representation**
 - **Chapters in Australia/New Zealand, Brazil, Europe, Japan, North America, Southern Africa, and South East Asia with petitions for additional chapters pending.**
- **The Supply-Chain Council (SCC) has developed and endorsed the Supply Chain Operations Reference-model (SCOR) as the cross-industry standard for supply chain management**

Level 1 Performance Metrics

SCOR Level 1 supply chain Management	Customer-Facing			Internal-Facing	
	<i>Supply Chain Reliability</i>	<i>Responsiveness</i>	<i>Flexibility</i>	<i>Cost</i>	<i>Assets</i>
Delivery performance	✓				
Fill rate	✓				
Perfect order fulfillment	✓				
Order fulfillment lead time		✓			
Supply Chain Response Time			✓		
Production flexibility			✓		
Total SCM 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					✓

SCM Metrics for sample set of firms in India

Firm	Cash to Cash cycle	Inventory (days)	Asset turnover ratio	ROCE
Madura Coats	93.57	98.06	1.25	0.54
TISCO	44.01	93.09	0.53	9.13
Siemens	4.72	64.97	2.80	36.45
Aventis Pharma	72.99	84.54	2.22	35.62
Cadbury India	12.25	65.91	2.50	33.24
Whirlpool	13.18	53.61	1.69	9.74
Hero Honda	-16.80	13.84	7.64	90.42

The impact of internet and the digital revolution

Cost of communication has been driven down dramatically

1. Time to communicate is shrunk significantly
2. Real time interaction is feasible (leading to tactical decisions becoming operational)
3. Location Aware and mobility solutions (Hand Held Terminals, RFID, GPS)

Collaboration within the firm

With investments in Information, Material Handling and Cash Management Technologies

Opportunity to make your supply chain efficient and nimble exists .

It is also the business imperative for success.