

# Operations Management

Course Case Mapping for

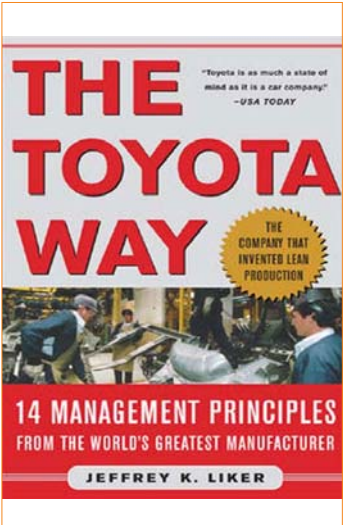
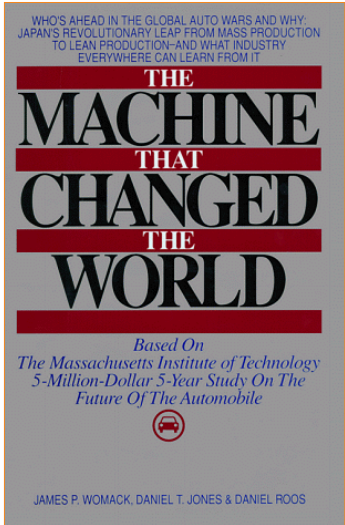
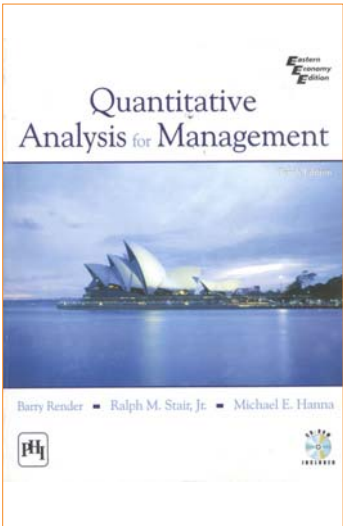
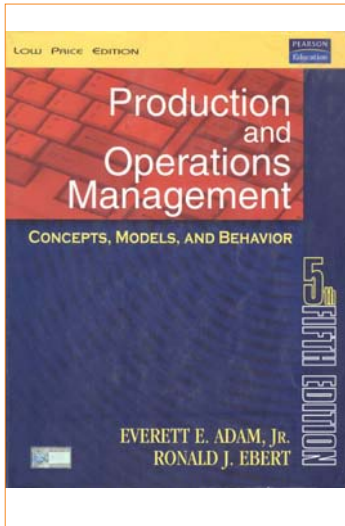
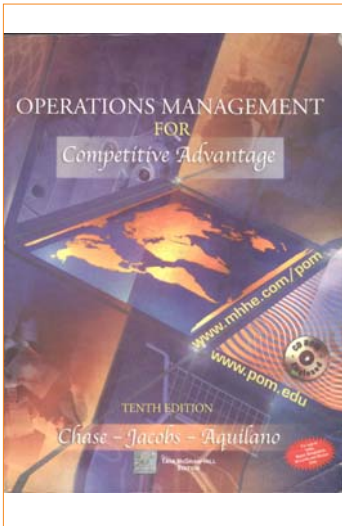


Mapped for  
Operations Management for  
Competitive Advantage  
Richard B. Chase, F. Robert Jacobs and  
Nicholas J. Aquilano

## Suggested Background Reading Material

1. "The Focused Factory", *Harvard Business Review*, May–June 1974
2. "Coupling Strategy to Operating Plans", *Harvard Business Review*, May–June 1977
3. "Logistics – Essential To Strategy", *Harvard Business Review*, November–December 1977
4. "Link Manufacturing Process and Product Life Cycles", *Harvard Business Review*, January–February 1979
5. "What Does Product Quality Really Mean", *Sloan Management Review*, Fall 1984
6. "MRP, JIT, OPT, FMS?", *Harvard Business Review*, September–October 1985
7. "Manufacturing By Design", *Harvard Business Review*, July–August 1988
8. "Organizing For Manufacturing Design", *Harvard Business Review*, January–February 1989
9. "Tailored Logistics : The Next Advantage", *Harvard Business Review*, May–June 1993
10. "Mass Production and the Beginnings of Scientific Management" (Note), *Harvard Business School*, 9-391-255
11. "The Super Efficient Company", *Harvard Business Review*, September 2001
12. "Leveraging Processes For Strategic Advantage", *Harvard Business Review*, September–October 1995
13. "Operations Executives Make a Comeback to the Executive Suit – Parts I, II, III", *s+b*
14. "The Coming Commoditization of Processes", *Harvard Business Review*, June 2005
15. "What FreshDirect Learnt From Dell", *s+b*
16. "When Should a Process Be Art, Not Science", *Harvard Business Review*, March 2009
17. "The Lean Service Machine", *Harvard Business Review*, October 2003
18. "The Contradictions That Drive Toyota's Success", *Harvard Business Review*, June 2008
19. "Beyond Toyota: How To Root Out Waste and Pursue Perfection", *Harvard Business Review*, September–October 1996
20. "Focusing On The Factory: Eight Lessons", *Business Horizons*, September–October 1994
21. "Competing On The Eight Dimensions of Quality", *Harvard Business Review*, November–December 1987
22. "The New Meaning of Quality in the Information Age", *Harvard Business Review*, September–October 1999
23. "TQM, ISO 9000, Six Sigma: Do Process Management Programs Discourage Innovation", *Knowledge@Wharton*
24. "Manufacturing Flexibility: A Strategic Flexibility", *Management Science*, April 1993
25. "Are There Limits to Total Quality Management", *s+b*, Second Quarter, 1998
26. "Lean Production and Sustainable Competitive Advantage", *International Journal of Operations and Production Management*, Vol. 20, No.8, 2000
27. "Deep Change – How Operational Innovation Can Transform Your Company", *Harvard Business Review*, April 2004
28. "From Lean to Lasting: Making Operational Improvements Stick", *Mckinsey Quarterly*, November 2008
29. "Bringing Lean Principles to Service Industries", *HBS Working Knowledge*
30. "The Evolution of Production Systems and Conceptual Frameworks", *Journal of Manufacturing Technology Management*, Vol.18. No.8, 2007
31. "Just-In-Time Production Concepts" (Note), *Darden Business Publishing*, UVA – OM – 0487
32. "Managing The New Product Development Process" (Note), *Harvard Business School*, 9-592-011

# Widely Used Books for Operations Management



# Operations Management

## Operations Management Course Case Mapping

Chapter	Detailed Syllabus	Session	Key Concepts	Case Study	Abstract	Background Reading/ Additional Reading
Introduction	The Field of Operations Management, Production Systems, OM in the organizational Chart, Operations as Service Historical Development of OM, Current Issues in Operations Management	1	Basics and Issues in Operations Management	Crisis at Strocem RMC: Significance of Operations Management	Strocem RMC is a Ready Mix Concrete (RMC) manufacturing plant owned by Deepak. As he is a civil engineer and knows the in and out of the entire manufacturing process, he manages all the operations of the plant alone. But of late he is unable to coordinate with the human resources and the supply chain requirement of the company. As a result, he faces a shortage of workers in the production process and also receives some complaints regarding the delays in delivering the product to his clients. When consulted, his friend Rajesh advises him to hire an operations manager. The case highlights the significance of Operations Management (OM) in any firm.	<ul style="list-style-type: none"> <li>Chapter 1, "Introduction to the field", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Operations Strategy and Competitive-ness	Operations Strategy, Operations Competitive Dimensions, The Corporate Strategy Design Process, Strategic Fit-Fitting Operational Activities to Strategy, Productivity Measurement	2	Operations Strategy, Competitiveness	Novel Foods' Change in Operations Strategy: Competitive-ness at Stake	Novel Foods, established by Amjed Khan, is a chain of restaurants, which had built a competitive advantage for itself in the market by offering wholesome meals with acceptable quality at half the cost offered by other local traditional budget restaurants. However, it was not a work of charity but a business with profit motive. Pitched on the cost of its product offering, the concept of Novel Foods was a major hit in the market. Within no time it expanded and was making profits. But when it introduced the concept of offering better quality and variety food along with other in-store conveniences at extra cost, it began losing its customers and struggled to make profits, thereby losing its competitiveness.	<ul style="list-style-type: none"> <li>Chapter 2, "Operations Strategy and Competitiveness", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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Process Analysis	Process Analysis, Process Flowcharting, Types of Processes, Measuring Process Performance, Process Analysis Examples, Process Throughput Time Reduction	5	Process Analysis, Process Flowcharting	Vijetha Textiles: Process Analysis	Vijetha Textiles was established by Anup Joshi (Anup), a textile engineer, a year ago. It manufactures T-shirts. The manufacturing of a T-shirt involves various stages like dyeing, cutting, design printing, stitching, checking of quality, ironing and finally packing. The process takes a stipulated amount of time at each stage. However, being a startup, the processes of the company are not yet stabilised and the output of the company is ineffective and inefficient. The process gets stuck up at some stages and is slowing down the whole process of manufacture. As Anup is apprehensive that the slow process may bring in losses, he is considering as how to improvise the company's processes to be effective and efficient. The case study tries to analyse the process of Vijetha Textiles and helps students to design a process that will increase the efficiency and effectiveness of the company's processes, which in turn will help in increasing its productivity.	<ul style="list-style-type: none"> <li>Chapter 4, "Process Analysis", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
				Takira Motors: Creating Assembly and Process Chart	Shakiro, a management student was selected as a summer intern at Takira Motors, one of the renowned bikes manufacturing company. It manufactures wide variety of bikes on large scale with an objective to fulfill the needs of bike lovers. There, he learnt all the aspects of process design the company is involved into and their importance in an organisation's success. At the end of his internship, he was given the task of conducting process analysis and creating Assembly and Process charts.	<ul style="list-style-type: none"> <li>Chapter 4, "Process Analysis", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
				Crunching Munch Time a Little	Satyam, the training manager was very much annoyed as the participants were taking more time during breaks in a training programme. He immediately realised the reason for the delay is the time taken to seve coffee/tea/biscuits. On an average, it is taking 1 minute from the time the server enquires each participant's preference until the participant moves away with his snack and drink. Satyam and his director, with the help of process analysis and flowcharting find a solution to the problem.	<ul style="list-style-type: none"> <li>Chapter 4, "Process Analysis", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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Product Design	Designing for the Customer – Quality Function Deployment, Value Analysis, value Engineering, Designing Products for Manufacture and Assembly, Measuring Product Development Performance	6	Product Design for Customer, Quality Function deployment, Value Engineering, Product Design for Manufacturing	Tropicana's Product (Re)Design: The Packaging Mistake	Product design is an important aspect of any manufacturing company. It has to take care of the external influencing factors like consumers' requirements and appeal and internal constraints like manufacturing process, economies of scale, etc. In January 2009, Tropicana North America changed the look or design of its flagship Tropicana Pure Premium brand cartons. The original image of an orange and the drinking straw was replaced by a new image which showed the actual orange juice in a clear glass and redesigned the cap to look like the outside of an orange. However, Tropicana's product (packaging) redesign became a marketing debacle as consumers and professional designers criticised the new design and termed it as confusing and generic in its looks and appeal. It also resulted in a 20% drop in the company's sales. In less than 2 months, the company decided to switch back to its original design. The case tries to analyse the importance of product design for any product and the various factors that need to be addressed while designing a product.	<ul style="list-style-type: none"> <li>Chapter 5, "Product Design and Process Selection – Manufacturing", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Manufacturing Process Selection and Design	Process Selection – Types of Processes, Process Flow Structure, Product-Process Matrix.	8	Types of Processes Process Flow	Chandan Creations': Process Selection Dilemma	Chandan Creations, owned by Chandan Shah (Shah), produces 80–90 lakh <i>rakhis</i> (a sacred thread tied by a sister on her brother's wrist on the occasion of <i>rakhi</i> festival) in a year. The raw material is sourced from across India. However, the production takes place not under one roof, but in 200 different homes on a small scale. The raw material is given to the workers on a daily basis, which is converted into finished product by the workers at their homes. The whole process is done by hand, with no machinery used at any of the stages of its making. But, Shah plans to have a manufacturing facility and introduce the machinery, to cut the base of <i>rakhi</i> that takes almost 25% of the workers time in cutting it, which he hopes would increase his production capacity. However, he doubts whether this process would make any significant improvement in his production process	<ul style="list-style-type: none"> <li>Chapter 5, "Product Design and Process Selection – Manufacturing", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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					and profits, as a nominal increase in these would not be of much benefit to the company.	
				Made in India	Rajesh is an entrepreneur, who has cherished the desire to provide exquisite cuisine and a fine dining experience to connoisseurs of good food. He wanted to utilise operations management techniques in process selection and design in his business operations. He believes that a production process is influenced by the product/service it produces, sales forecast, production technology etc. The production technology is also critical in process selection which in turn helps to decide capacity planning, facilities layout, jobs, etc. He designed two processes and has to decide among them for adaptation. Finally, he uses the Product-process Matrix framework in order make a process selection decision.	<ul style="list-style-type: none"> <li>Chapter 5, "Product Design and Process Selection – Manufacturing", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Service Process Selection and Design	The Nature of Services, and Operational Classification of Service, Applying Behavioral Science to Service Encounters, Designing Service Organizations, Structuring the Service Encounter, Service-System Design Matrix, Service Blueprinting and Fail-Safing	11	Basics of Service Process, Service Process Design	Gourmet's Fantasy: Implementing Customer-Oriented Approach	Restaurants are the places, which serve food and drinks to its customers. The two important factors, which allure the customers to a restaurant, are the quality of food and service. Most of the restaurants targeting classy section of the society concentrate more on the ambience rather than their service, which results in attracting customers for the first time but not the second time. To become a better service provider, a restaurant must provide better service by training its staff as per their requirement. Service is a very important factor for the success of a restaurant, as poor service will ruin the entire dining experience no matter how good the ambience is and how delicious the food is. The case study focuses on Gourmet's Fantasy, a food chain spread across India, specialised in serving low calorie and low-carb foods. Even though the restaurant became a huge hit initially, it has been losing most of its customers due to the waiting time and poor home-delivery services. The case study	<ul style="list-style-type: none"> <li>Chapter 6, "Product Design and Process Selection – Services", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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				analyses if the customer-oriented approach adopted by Gourmet’s Fantasy can bring back its past glory?	
			SpiceJet: Dedicated to Serve Customers with Excellence	SpiceJet, a Delhi-based profitable private domestic airline, extends its services to most of the cities in India. Having started its operations in mid-2005, it acquired 2 <sup>nd</sup> position among the privately-owned airlines with 12% market share. The main objective of the airline is delivering highest consumer value with lowest costs. Today, it became one of the preferred airliner for price-sensitive consumers. It endeavours to provide affordable, comfortable and refreshingly efficient experience for all the travellers. The key features for success of the airline are – affordable and dynamic fare structure, power of technology, power of performance, power of safety and experienced management. However, the company is unable to maintain consistency in its services through out its operations across the country and is bugged with problems like flight delays, bahaviour of the staff, service levels, etc.	<ul style="list-style-type: none"> <li>Chapter 6, “Product Design and Process Selection – Services”, <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
			Siva Gabbita’s Dontanpalli Operation I	The case deals with the different activities of Siva Gabbita, during weekdays and weekends. He stays near Banjara hills, travels to his workplace at Dontanpalli, by bike and bus. Everyday, he parks his bike at Panjagutta and takes his office bus to reach his workplace. Usually, during weekends Siva travels an average of 20 km to shop, meet friends, etc., on his bike. On weekdays, the distance travelled on his bike is 6 kms and he refills his bike once in a week. Presently, he has a dilemma of how much petrol should he maintain in his bike, to reduce his annual expenditure towards petrol. The tank capacity of the bike is 10 litres and gives mileage at 30 kmpl. The first option is maintaining with 3 litres in petrol tank and the other option is maintaining with 9 litres. With the help of suitable Inventory control technique, he wants a solution for his dilemma. The case also discusses about	<ul style="list-style-type: none"> <li>Chapter 6, “Product Design and Process Selection – Services”, <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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					the various parameters like order quantity, ordering costs, holding costs, etc.	
Facility Location	Plant location methods-Factor rating, Transportation Method (only formulation), Centroid Method, Locating service facilities.	15	A Factor Ratings Method, Simple Median Model	NSPL: Importance of Facility Location in Business Success	Naveen Stylish Garments Private Limited (NSPL) was founded by a reputed technocrat, Deepak Chawla (Deepak), near Gwalior in 1990. In the beginning, the technical capabilities and managerial skills of Deepak helped NSPL in streamlining its operations. His rationalised plans and global experiences were customised to suit Indian culture and economic standards. Within no time the company attained 200% growth and decided to go for expansion in South India. The management considered 'Factor ratings' method, for identification of a suitable state in South India for their proposed operations. Accordingly, NSPL chose Andhra Pradesh for its operations in South India. The company identified the exact coordinates of their distribution centre with the help of Simple Median Model (SMM) and reduced its transportation costs considerably.	<ul style="list-style-type: none"> <li>Chapter 5, "Facility Location" (Technical Note), <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> Edition</li> <li>Chapter 6, "Locating Production and Service Facilities", <i>Production and Operations Management Concepts, Models, and Behavior</i>, Adam Everett E. Jr. and Ebert Ronald J., 5<sup>th</sup> edition</li> </ul>
				Location of a Production Facility	Platex Limited (Platex), which emerged as one of the foremost manufacturers of textile handicrafts in North India, realised the increasing demand for its products in South India. It planned to set up a new production facility at a suitable location and zeroed in on few locations for consideration. The management collected relevant data about the states and major cities, which list out the benefits of the location and other factors like cost, potential, etc. Ultimately, Factor rating method was used to identify a suitable state and Center of gravity method was used to identify a suitable location for their proposed business operations. Based on information and experience in the field, a wide variety of factors are identified and included in the analysis. Appropriate weightage was given for each factor in the analysis. After interpretation of the score of critical factors, Ernakulam in Kerala was selected for their business operation in South India.	<ul style="list-style-type: none"> <li>Chapter 5, "Facility Location" (Technical Note), <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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			Locating and Laying out the Fast Food Business	<p>The case explains the various business strategies adopted by McDonald group since its inception. In 1948, Richard and Maurice McDonald opened a burger and fry outlet at San Bernardo. By 1961, McDonalds became a company, which offered value to its customers and shareholders. McDonald treated the delivery of fast food as a manufacturing process rather than a service process. As a result, it provided cutting-edge, efficient services by minimising deviation in the service experience from customer to customer. He also came up with the concept of ‘customising the service experience’ by designing a new product for health conscious consumers called the McLean Deluxe. As part of expansion, McDonald opened its first outlet in Delhi in 1996. To counter competition in fast food business, they introduced ‘Made for You’, system, where cooking began after the orders were received so as to ensure the freshness of the products. The case study deals with the identification of a suitable location for McDonald in Hyderabad.</p>	<ul style="list-style-type: none"> <li>Chapter 5, “Facility Location” (Technical Note), <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
			Transportation Method	<p>Utilisation of Transportation Method in Sandino Furniture</p> <p>Sandino Furniture (Sandino) is a one-stop shop for all the furniture needs of the customers. The shop, which is located in Sydney, Australia, manufactures beds at three different locations namely Sydney, Perth and Melbourne and distributes them through warehouses located in Kingston, Darwin and Brisbane. The case study mainly discusses as to how the company has used the transportation model. The case study centres on how the company has selected the shipping routes, which have to be used to transport the desks to minimise the total transportation cost by using Transportation model.</p>	<ul style="list-style-type: none"> <li>Chapter 10, “Transportation and Assignment Models”, <i>Quantitative Analysis for Management</i>, Render Barry, et al., 10<sup>th</sup> edition</li> </ul>
Facility Layout	Basic Production Layout Formats, Process Layout (CRAFT) Product Layout (Assembly	19	Process Layout (CRAFT)	<p>Playhouse Toys Centre: Implementing Process Layout</p> <p>Playhouse, one of the famous toys wholesale distribution centres, is located near New Delhi, India. Playhouse has a huge customer base wherein the customers place orders either online or order for a bulk directly at the centre. The management of Playhouse was dissatisfied with the costs involved in moving the loads</p>	<ul style="list-style-type: none"> <li>Chapter 5, “Facility Location” (Technical Note), <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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Line Balancing), Group Technology (Cellular) Layout, Fixed-Position Layout, Retail Service Layout, Office Layout.			between the departments. They wanted to reduce the costs which could be done by modifying the layout. The case study mainly centres on Playhouse implementing process layout in order to reduce the materials handling costs. Process layout has been particularly implemented in this case since Playhouse consisted of grouping the departments of the same functional type together.	
	Product Layout (Assembly Line Balancing), Group Technology (Cellular) Layout Fixed-Position Layout, Retail Service Layout, Office Layout	Change in Product Layout Leads to Profitability: A Case Study for DSPL	After analysing the market survey, Sambhu started an iron ore Pelletisation plant “Dharani Steels Private Limited (DSPL)” with capacity 0.3 MMTPY in 1995. In the initial years of its establishment i.e., 1995–2000, the company growth was quite encouraging and reached to a level of net profit INR 6.5 crore recorded in the financial year 2000. To boost the gains, the company capacity has been doubled. However, few years after its expansion, the company profits were declined. Ajay, who was a classmate of Sambhu, provided technical help in evaluating the operational problems in the plant. Ajay reviewed the existing operations thoroughly and recommended ‘Assembly line Balancing Technique’ to mitigate operational problems. Consequently, the company improved its productivity and achieved targeted profits.	<ul style="list-style-type: none"> <li>• Chapter 5, “Product Design and Process Selection – Manufacturing”, <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> <li>• Chapter 6, “Layout Planning”, <i>Production and Operations Management Concepts, Models, and Behavior</i>, Adam Everett E. Jr. and Ebert Ronald J., 5<sup>th</sup> Edition</li> </ul>
	Travelsafe Manufacturing Company (TMC)	Travelsafe Manufacturing Company (TMC), is a leading manufacturer of leather products in North India. The main products of TMC include leather suitcases, leather briefcases, leather backpacks, leather suave backpacks and zippered leather briefcases. All of its products were having a high demand and mobility in the market, except for the briefcase segment which showed a continuous downtrend. With increased marketing efforts targeted to its existing customers, TMC for the first time bagged a very big order for 60,000 leather briefcases. Since, its production facility was not suitable to handle such big orders,	<ul style="list-style-type: none"> <li>• Chapter 5, “Product Design and Process Selection – Manufacturing”, <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>	

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					<p>the management decided to change the existing facility layout to 'Assembly line layout' to meet the demand. The management modified the existing cycle time, number of work stations based on Assembly line balancing concept and ultimately the company achieved the efficiency of work stations to 78.6%.</p>	
				<p>IBS LTYAOU: Unraveling Jumbled Flows with Relative Station Proximity</p>	<p>The case analyses the existing facility layout of an academic centre in Dontanpalli. The objective of the study was to understand the perceptions of faculty, staff and students in terms of promoters and inhibitors of productivity in daily activities. The facility layout of an organisation has greater influence on the daily activities of an organisation in terms of time saving and reducing costs. The basis for the study is few rounds of initial interviews followed up with a pre-questionnaire survey. The survey responses were further supplemented with participant observations of student-student, student-teacher, teacher-teacher and teacher-staff interactions.</p> <p>Some of the responses include, transparency between departments which was seen as an essential requirement. Both faculty members and students felt that access to faculty chambers must be facilitated by locating faculty chambers close to and as far as possible on the same floors. The number of rest rooms therefore needed to be rationalised and rest rooms ought not to be located in cramped corridors facing the entrances of classrooms and faculty chambers. Most importantly water coolers should not be located right outside rest rooms for hygienic reasons. Streamline the vehicular traffic through separate entry and exit gates.</p>	<ul style="list-style-type: none"> <li>• Chapter 5, "Product Design and Process Selection – Manufacturing", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Waiting Line Management	Economics of Waiting Line Problem, The Queuing System, waiting line method (MM1 Model in detail)	21	Queuing System	Fun World: The Management's Decision Dilemma	<p>Fun World is India's first and most popular amusement park, which is located in Mumbai. It even has a water-based theme park called Lakes. The amusement park earned a reputation as the perfect leisure destination for people looking for a refreshing break. The park has a variety of rides ranging from Giant Wheel, Go Karting to Mini Kombat and Slippery Sultan. At any given time,</p>	<ul style="list-style-type: none"> <li>• Chapter 14, "Waiting Lines and Queuing Theory Models", <i>Quantitative Analysis for Management</i>, Render Barry, et al., 10<sup>th</sup> edition</li> </ul>

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				<p>it can be seen that many people wait in queues for these rides. Even though many people prefer waiting in the queue, few people lose patience and leave. This, in turn, results in losses. So the existing operations head Tim Mike (Mike) hired James Murphy (James), a consultant and expert in Decision Sciences who visited the park and observed the waiting lines. After observation, James decided to implement constant service time model in order to reduce the waiting times in the queues. He even advised to change the automated operator and use a new operator so that the waiting time can be reduced. The case study mainly deals with how the constant service time model has been implemented in Fun World in order to reduce the waiting times.</p>	
			<p>Harish Automobile Repair Shop: A Case of Queuing Theory</p>	<p>Harish Automobile Repair Shop, located in one of the busiest locations in Hyderabad (India), is into repairing different types of automobiles like cars, bikes, auto rickshaws and vans. Harish, the owner of the repair shop, hires his mechanics based on few criteria like sound technical knowledge, physical fitness and positive attitude towards work. A mechanic in the shop, Ravi, takes more than the required time to complete his job. Harish is in a dilemma whether to continue with Ravi or replenish him with Rama, a mechanic who is known to be more productive and high-priced when compared to Ravi. Meanwhile, Harish had plans of opening a second garage wherein he wanted Ravi to work along with another new mechanic Raja who works at the same rate as Ravi does. In the first two cases, he uses a single-channel queuing system and in the third case, he uses a multi-channel queuing system to calculate the total daily costs. The case study primarily deals with the dilemmas Harish faces in expanding his workshop.</p>	<ul style="list-style-type: none"> <li>• Chapter 12, "Network Models", <i>Quantitative Analysis for Management</i>, Render Barry, et al., 10<sup>th</sup> edition</li> </ul>

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Strategic Capacity Management	Capacity Management in Operations, Capacity Planning Concepts, Capacity Planning, Planning Service Capacity	22	Capacity Planning	Excel Printers: A Startup Company's Capacity Planning	<p>Manoj and Tripathi are good friends and they do not want to join their family business. Because of the inclination towards printing works, they wanted to start their own printing business with monetary help from their families. However, they do not want to do it in a big way. They wanted to do the occupation on their own and learn from it. They purchased printing equipment, which consists of two high speed printers and that can be operated by one operator.</p> <p>When they reviewed their business after few months, they found that it has grown considerably. But, they still wanted to take it further and therefore took up new advertising and marketing initiatives, highlighting their new incentives.</p> <p>Due to advertising and new customer incentives, orders began pouring in. Both of them reviewed the orders and discussed about determining the capacity of their operation and the current load on their facility. The case study deals with the company's capacity planning issues because of increased orders. The case study is useful for understanding the concept of capacity planning in Operations Management.</p>	<ul style="list-style-type: none"> <li>Chapter 10, "Strategic Capacity Management", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Aggregate Sales and Operations Planning	Overview of Sales and Operations Planning Activities, The Aggregate Operations Plan, Aggregate Planning Techniques	24	Aggregate Sales and Operations Plan	Halo, a DVD Manufacturer: Sketching its Aggregate Sales and Operations Plan	<p>The case study primarily deals with preparing the annual operations and sales plan for Halo DVD manufacturing company (Halo). Operations and Sales plan is not only important but also essential for any firm. When it comes to manufacturing firms, the plan is extremely important since the firm's profitability is based on the plan prepared. Mohan, the operations manager for Halo, is given the responsibility to prepare the operations and sales plan for the next 6 months i.e., January–June. Since the company may run into losses, Mohan is asked to prepare three plans. The management chose the best and the most cost-effective of the three plans in order to implement in the company.</p>	<ul style="list-style-type: none"> <li>Chapter 13, "Aggregate Sales and Operations Planning", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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				Bake a Cake	Bhaskar, a master baker at a large bakery resigned his job and wanted to start his own business. His wife Sandhya also joins him. Bhaskar specialises in making high-quality, decorated fruit cakes. Initially, he started on a small scale by involving only his family members and produced 500 cakes per day that meets the existing demand. After a year, he bagged an order for 5,000 cakes to be delivered within a week's time. He realised, it requires a special production line to perform the finishing, decorating and packing of the cakes. Then they have to employ more manpower to meet the demand. The case orchestrates the concept of aggregate operations planning, which is helpful in identifying a suitable option to Bhaskar.	<ul style="list-style-type: none"> <li>Chapter 13, "Aggregate Sales and Operations Planning", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Inventory Control	Definition of Inventory, Purposes of Inventory, Inventory Costs, Independent versus Dependent Demand, Inventory Systems, Fixed – Order Quantity Models, Fixed-Time Period Models, Selective Control, including ABC, VED Classifications, Optional Replenishment System, 2-Bin system	28	Basics of Inventory & Single-Period Inventory Model	Reduction in Expenditure using Single-Period Inventory Model: A Case Study for PGS	For the past one decade, Partha Green Solutions Private Limited (PGS), a renowned consulting firm in India is providing its remarkable services to industrial sector. Recently, the company has planned to organise a nation level training programme in climate change. Ram Mohan(Mohan) the director of PGS, intended to organise the programme in a cost-effective method without compromising on the quality. He realised that estimating the training demand i.e., expected number of participants is the key factor in organising the programme successfully. In such type of situation, the expected participants' number is unknown. It is helpful in making necessary arrangements and minimising the expenses. He identified and adopted Single-period inventory model through which he maximised the profits by reducing the expenses. Accordingly, he made arrangements and completed the programme with minimal expenses and gained everybody's appreciation.	<ul style="list-style-type: none"> <li>Chapter 14, "Inventory Control", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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			<p>Economic Order Quantity Models</p> <p>Role of Inventory in Reducing the Cost of Production: A Case Study for PSPL</p>	<p>'Pratap Stable Thermal Energy Private Limited (PSPL)' popularly known as 'Pratap Energy' was established in 2005 with power generation capacity of 12.5MW. The plant was set up near a port village, Nizampatnam in Guntur district. In the initial years of its establishment, the profit of the company was quite encouraging. Suddenly, the power plant started facing a problem. It was unable to manage its raw materials especially coal. The senior manager of the company Nanda Kishore (Kishore), conducted a comprehensive study on this problem and recommended 'Fixed-Order Quantity Model' for procurement of raw materials whose costs are nearly 20% of the production costs. After adopting the suggested model, the company recorded considerable profits by reducing 2.5% of its production costs.</p>	<ul style="list-style-type: none"> <li>Chapter 14, "Inventory Control", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
			<p>Fixed-Time Period Model</p> <p>Reduction in Inventory Costs using Fixed-Time Period Model: A Case Study for PETS</p>	<p>'Prahlad Engineering and Techno Solutions' (PETS), was a distinguished consulting firm in India, founded by Vinay Prahlad (Prahlad), who is an MBA from a reputed Business School. His core competence is in 'Corporate strategy'. He wants to surmount the adverse impacts of recession on PETS, by improving the productivity and maintaining the paramount standards. As a result, he set up goals for the senior officials in the organisation. Ram Prasad, working as HR manager is strong supporter of Prahlad, intended to improve his divisional performance by implementing cost cutting processes and procedures. At the outset, he considered 'Fixed order quantity model' to reduce the inventory costs. Then, he realised some stock out scenarios, which lead to heavy production losses. Then he switched on to 'Fixed time period model', which maintains safety stocks. Eventually, he recommended Fixed time period model as it reduces shortage losses and inventory costs.</p>	<ul style="list-style-type: none"> <li>Chapter 14, "Inventory Control", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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			ABC Analysis	Inventory Management through ABC Analysis – A Case Study for Super Sounds Inc.	<p>Super Sounds, Inc. (Super Sounds) is a leading speciality retailer founded more than 60 years ago in Cleveland, Ohio. The store provides a vast array of items to inspire accessories of all kinds. The company aims to meet its customers' needs not only with its products but also with the services and advice to help with their needs. Thus, customer service is an essential element of Super Sounds' successful retail model.</p> <p>The shop is in a storefront location on a busy street and it has limited storage space for inventory. Recently, as demand for its few products increased, management has had difficulty in managing the inventory. They frequently run out of some crucial products but seem to have endless supply of others. Hence the management of Super Sounds understood the value of managing inventory to satisfy customers and to bring down inventory costs. Obviously, having excess inventory will have huge inventory costs. To reduce costs in an inventory system, the focus should be on certain important high valued items. In this context, a management trainee provided a solution to the problem, by suggesting ABC analysis for their needs. This ABC classification process helped manage the inventory properly. The implementation of the ABC Analysis became a key element of supply chain and inventory management across Super Sounds stores.</p>	<ul style="list-style-type: none"> <li>Chapter 14, "Inventory Control", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
Materials Requirement Planning	Where MRP Can Be Used, Master Production Schedule, Material Requirements Planning System Structure, MRP Examples	29	Master Production Schedule, Material Requirements Planning	Material Requirements at King Furniture	<p>King Furniture Pvt. Ltd. (King Furniture), founded in 1982, is part of a family enterprise with a combined manufacturing strength across several products that gives it the vital component strength in furniture manufacture. King Furniture's facilities include state-of-the-art plants for manufacturing powder coated and electroplated metal parts and injection moulded items. Injection mould unit manufactures chair seats. It serves all over India and it has been popular for quality, innovative &amp; aesthetic</p>	<ul style="list-style-type: none"> <li>Chapter 15, "Material Requirements Planning", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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					<p>designs and prompt delivery. Although it has tie-ups with many corporate customers. the demand for the company’s chairs is not regular. For some weeks there will not be any demand at all, while for some weeks there will be a huge order. Hence, then onwards the company decided to plan the production for every quarter. Now, the production manager at the company wanted to develop a materials requirements plan for producing chairs for a specified period. Materials Requirements Planning (MRP) is a technique which assists a company in the detailed planning of its production. MRP calculates and maintains an optimum manufacturing plan based on master production schedules, sales forecasts, inventory status, open orders and bills of material. If properly implemented, it will reduce cash flow and increase profitability. MRP will help to be proactive rather than reactive in the management of your inventory levels and material flow.</p>	
Supply Chain Strategy	Supply Chain Drivers, Supply Chain Strategy, Measuring Supply Chain Performance, Push Strategy/Pull Strategy/Push-Pull Strategy, Bullwhip Effect, Outsourcing, Design for Logistics, Global Sourcing, Mass Customization.	30	Supply Chain Strategy	The House of Garb: Implementing Supply Chain Strategy	<p>The case study primarily deals with ‘The House of Garb’, a fashion house in New Delhi, which has been in the fashion business since 1982. The company, which has been enjoying success with the current business model, started getting complaints from its retailers. After assessment, the company realised flaws in its supply chain. For this, they evaluated different supply chain strategies and chose Mass Customisation to be implemented in their company. The company could satisfy the retailers as well as its customers after the successful implementation of Mass Customisation programme.</p>	<ul style="list-style-type: none"> <li>Chapter 9, “Supply Chain Strategy”, <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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Total Quality Management; Evolution of TQM	Quality Specification and Quality Costs, Six-Sigma Quality, The Shingo System: Fail-Safe, ISO 9000, ISO 14000	32	Total Quality	Abide Manufacturers Limited: Implementation of ISO 9000	The case study mainly deals with Abide Manufacturers Limited (Abide); a renowned manufacturing company established in 1950s that enjoyed an exceptional position in the market. Of late, the company started struggling for survival in the face of huge competition. After assessment, the management had decided to replenish its general manager (Quality) with a new one, Varun Mitra (Mitra). Mitra showed excellent improvement in one of the company's production units which is the reason why he was appointed as the head of the quality department of the company. After research, Mitra decided to implement ISO 9000 and consolidate the gains after its implementation. In the long run, he had plans to implement Total Quality Management (TQM). The implementation of ISO 9000 clarified roles and responsibilities of the employees within the company. The employees became more involved, motivated, committed, accountable and organised, which resulted in the improvement of the work culture.	<ul style="list-style-type: none"> <li>Chapter 7, "Total Quality Management: Focus on Six Sigma", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
			Six Sigma Quality, Quality Standards	Victor in India: Six-Sigma Implementation	The case study primarily deals with Victor Motor Company (Victor), a renowned car manufacturer in Australia. The company forayed into the Indian market in the 1980's. The company, which has been enjoying 70% of the stake in car market in Australia, started getting numerous complaints from its customers in India and not many were ready to buy its cars. After assessment, the company's newly appointed CEO realised that the cars were not manufactured keeping the Indian road and climatic conditions in mind. Even the quality standards of the car were very low which in turn affected the sales of the car. The company implemented Six-Sigma methodology to improve its quality standards. What remains a question is will the company be able to achieve all the targets set by the CEO? By implementing a Six-Sigma programme, will the company be able to solve all its quality related issues	<ul style="list-style-type: none"> <li>Chapter 7, "Total Quality Management: Focus on Six Sigma", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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					and manufacture defect-free cars? Can any company facing quality related issues implement Six-Sigma programme?	
Just-In-Time and Lean Systems	JIT/Lean Logic, The Toyota Production System, Elimination of waste, Value Stream Mapping, JIT/Lean Implementation Requirements, JIT/Lean in Services	34	Just in Time, Lean Manufacturing	Ishikawa Motors Limited: Implementation of Just-In-Time and Lean Practices	The case study mainly deals with Ishikawa Motors Limited (Ishikawa), a renowned manufacturer of medium to heavy duty trucks in Japan in the 1960's. Years after its establishment, the company started facing challenges like lack of land availability to store the inventory, which resulted in the company taking another building for lease to store the finished goods. All these problems led to company running into losses. The company approached a consultant who, after analysing Ishikawa's problems, advised to implement Just in Time (JIT) technique. The management followed the consultant's advice and implemented JIT technique, which changed the future of the company. The layout of the company underwent a change, the quality of its products improved, the inventory reduced and even the employees became more involved in the work. This resulted in the company climbing the success ladder.	<ul style="list-style-type: none"> <li>Chapter 11, "Just-in-Time and Lean Systems", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>
				Siva Gabbita's Dontanpalli Operation II	The objective before Siva Gabbita is to deliver a standardised OM course content broken up into 33 specific sessions. He considered the whole system as production process and the raw material that has to be moulded into high quality finished goods are the students. The suppliers for the process are the academic department, administration department, library, photocopying shop, etc. Siva adopts a philosophy of continuous and forced problem solving that keeps trying to drive out waste from the system known as JIT. The goal of JIT is to speed up throughput and allow faster delivery times thereby reducing inventory buildups. The concept behind JIT is that of a pull system: A system that pulls a unit to where it is needed just as it is needed as opposed to a push system, a system that produces and dumps output to customers.	<ul style="list-style-type: none"> <li>Chapter 11, "Just-in-Time and Lean Systems", <i>Operations Management for Competitive Advantage</i>, Chase Richard B., et al., 10<sup>th</sup> edition</li> </ul>

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Project Management	Introduction, Structuring Projects, Work Breakdown Structure, Network-Planning Models, Time Cost Modes, Managing Resources.	36	Network Planning Models, Time Cost Models	Aroma Electronics: Step towards Networking Techniques	The case study primarily deals with Aroma Electronics (AE), one of the famous retail chains, which is located across India. At AE, one can find different branded products having diverse features. Even though the company manufactures a huge variety of products and has a huge customer base, it started facing few challenges like the cost involved in transportation of the goods to all its outlets located in different locations. In order to resolve the issue, the management decided to transport its goods in the shortest route possible. For this, they adopted different methods like minimal spanning tree technique, maximum flow technique and shortest route technique. By applying these techniques, the management could resolve the problem by choosing the shortest route possible to transport its goods to different locations.	<ul style="list-style-type: none"> <li>Chapter 13, "Project Management", <i>Quantitative Analysis for Management</i>, Render Barry, et al., 10<sup>th</sup> edition</li> </ul>
			Project Scheduling Work Breakdown Structure	Maruti Metal Works: Evaluation of Project using PERT	Maruti Metal Works Pvt. Ltd. (MMW) is one of the famous metal works plants in India. The plant is into manufacturing and exporting industrial rectifiers, industrial ovens, magnetic pumps, centrifugal pumps and industrial processing equipment for a variety of businesses. Since the plant manufactures industrial processing equipment, a lot of smoke is emitted from the plant. The plant has been avoiding the expense of installing air pollution controlling equipment even after repeated warnings from the Environmental Protection Groups (EPG). The local EPG has warned the company to get a complex air filter system installed on its main smokestack within 16 weeks. Madhav, the managing partner of the plant was worried about how to manage such large-scale, complicated projects effectively. He does not want any money to get wasted which occurs if the projects are poorly planned and wanted to avoid unnecessary delays caused due to poor scheduling. The case mainly deals with how Madhav has adopted Program Evaluation and Review Technique (PERT) in order to plan, schedule, monitor and control the project.	<ul style="list-style-type: none"> <li>Chapter 13, "Project Management", <i>Quantitative Analysis for Management</i>, Render Barry, et al., 10<sup>th</sup> edition</li> </ul>

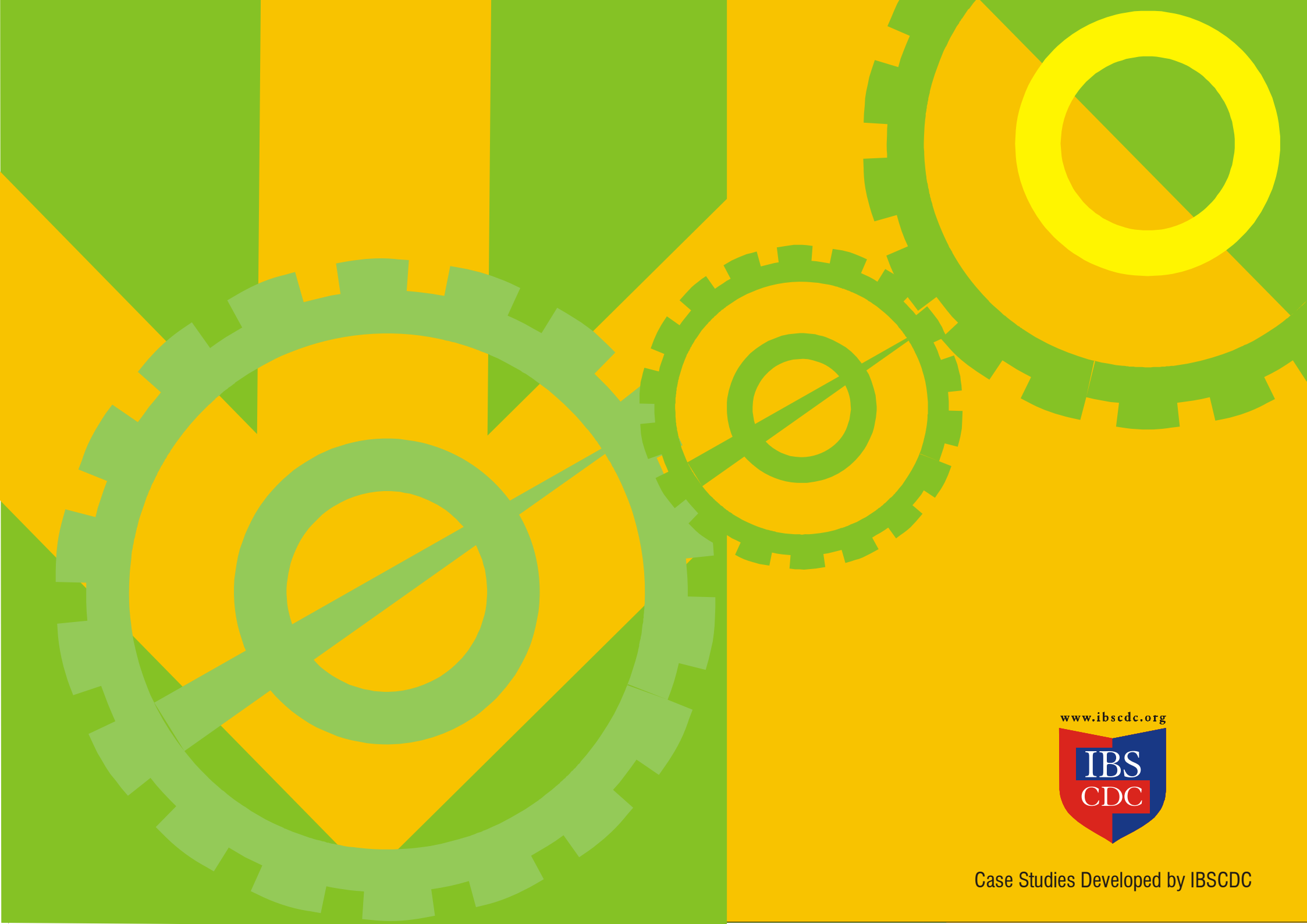
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Sl. No.	Location/City	Contact Name	Designation	Mobile No.	email ID
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2	Hyderabad	Mr D Nagavender Rao	Area Manager	09885451717	dnr@iupindia.org
3	Indore	Mr Sanjay Gangil	Area Manager	09425322620	sanjaygangil@iupindia.org
4	Kochi	Mr Musthafa K.E.	Dy.Manager	09895226559	mushthafa@iupindia.org
5	Kolkata	Mr Sumit Naha	Territory Manager	09331833254	sumitn@iupindia.org
6	Mumbai	Mr Vikram Singh Sandhu	Area Manager	09867672728	vikram@iupindia.org
7	Noida	Mr Hemant P Sharma	Territory Manager	09810080520	hemantps@iupindia.org

**IBSCDC,** www.ibscdc.org  
IBS Hyderabad,  
Survey No.156/157, Dontanapalli Village, Shankerpalli Mandal  
Ranga Reddy District - 501504  
Phone: 08417-236672  
E-mail: info@ibscdc.org, serv@ibscdc.org





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