

**A BOOK REVIEW OF MODRÁK, V. AND PANDIAN, R.S. (EDS.)
"OPERATIONS MANAGEMENT RESEARCH AND CELLULAR
MANUFACTURING SYSTEMS: INNOVATIVE METHODS AND
APPROACHES" IGI GLOBAL, HERSHEY, PA AND NEW YORK,
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This book, which is available at <http://www.igi-global.com/book/operations-management-research-cellular-manufacturing/51935>, describes the state of the art in terms of knowledge of operations management in the advanced environment of cellular manufacturing. The book has 20 chapters, 440 pages, written by 44 authors who are mostly employed by prestigious universities and technology centers in 13 countries. The cellular manufacturing (enhanced group technology-object-driven flow with the best productivity/product among all types of production) is not a new technology, but it is the most productive one, in comparison to fixed-position (no flow) and technology-driven flow (loaded machine-tools but lower productivity per finished product, in the book called process-driven). Therefore it is the subject of intensive improvements and implementations throughout the world. Hence, the book took this kind of manufacturing system as the target for investigating the progress in producing goods for super-consumer-oriented customers in the 21st century.

It is very interesting to notice that the book is written by 44 authors from 13 countries. Among them there are nations advanced in manufacturing; USA (8), Netherlands (3), Italy (5), Japan (4), Slovakia (3) and Poland (2), intensively developing manufacturing as the outsourcing to countries; China (1), India (4), Brazil (1), and Romania (1), and countries looking for the opportunities in manufacturing; Iran (5), Tunisia (5), Turkey (2).

Among the most advanced manufacturing nations only Netherlands and Italy is committed to manufacturing. Poland has good roots in manufacturing but it is rather a "robot" of German and French corporations after 1989, when it transformed its central planning to market economy. Slovakia is blossoming in manufacturing, mostly in the car industry. This short review of the manufacturing might indicates that the manufacturing technology is slowly passing from Western to Asian Civilization, while Islamic Civilization is getting ready for manufacturing, particularly in Iran, Turkey, and Tunisia.

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The book is edited by Vladimír Modrák and R. Sudhakara Pandian. V. Modrák is a Professor of Manufacturing Technology and Head of Department of Manufacturing Management at the Technical University of Košice in Slovakia. He lectured as Visiting Professor at University of Perugia (Italy), University of Applied Sciences Wildau (Germany), University of Czestochowa (Poland) and held seminars at the Keyworth Institute at the University of Leeds (UK), University of Salerno (Italy) and University of Perugia. Presently, he is also Chairman of the Commission for Doctoral Study in the field of Industrial Engineering. Prof. Modrák is co-author and editor of several books on manufacturing logistics, manufacturing technology and other topics.

R. Sudhakara Pandian (Kalasalingam University, India) earned his PhD in Mechanical Engineering under TEQIP fellowship from National Institute of Technology Rourkela, India in 2008. He has done post-doctoral work at Technical University of Kosice, Slovak republic in 2009-10. Now he is working as an Associate Professor in the Department of Mechanical Engineering at Kalasalingam University, India. In May 2010, Institution of Engineers (India) honored him with Young Engineers Award in the field of Production Engineering. His research interests include cellular manufacturing system, optimization techniques, operations management and logistics management.

Both Editors reflect the experience European approach to manufacturing and Indian quest for being the World Laboratory. This kind of synergy led to the development of this book, which is not a typical eclectic set of chapters. Contrary, it is a synergetic system of chapters, which complement each other.

The book addresses; 1) Trends of Methods in Cell-Oriented Manufacturing, 2) Production Planning and Scheduling in Cellular Manufacturing Environment (CMS), 3) Related Issues to Cellular Manufacturing Systems. These are the classic areas of industrial engineering, but presented at the state of the art level in the 21st century, containing about 150 years of Industrial Revolution's experience and constant quest for better productivity and effectiveness of factories.

The related issues to CMS touch some aspects of flexible manufacturing cells and robotic manufacturing cells. These forms of cellular manufacturing, in addition to other advantages, observe principles of agile manufacturing and thereby help to satisfy the growing requirements of customization for very demanding customers. Among several topics the following ones are treated with special attention:

- Cluster Analysis for Cell Formation
- Connected and Disconnected Cellular Systems
- Flexible Manufacturing Cells
- Flow Stop Scheduling Problems
- Genetic and Hybrid Algorithms in Cell Formation
- Graph Theory and Design of Manufacturing Cells
- Lean Thinking Based Investment Planning
- Non-Traditional Optimization Algorithms
- Operator Assignment Decisions
- Petri Net Models

The book is intended to support the academicians and industrialists (teachers, doctoral scholars, decision makers in industry, and students educated in this field). It is also intended to support subjects of operations management in industrial practice. The book reflects a mix of long manufacturing experience and rising dynamics of scholars from so many countries with so many diverse knowledge, skills, and strategies. Therefore it is a very interesting book, since its authors are very motivated scholars and specialists, very conscious of what is going on in the area of manufacturing world-wide in the Global Economy. The readers will find in this book a very important and useful knowledge for professional growth and practice.

Reference:

Modrák, Vladimír and R. Sudhakara Pandian. "Operations Management Research and Cellular Manufacturing Systems: Innovative Methods and Approaches." IGI Global, Hershey, PA and New York, October, 2011, ISBN13: 9781613500477.



