



Quantitative Approaches to the Assignment of Multi-skill Service Jobs to Multi-skilled Resources in the Telecommunications Industry

By Bernhard S. Schwarz

Shaker Verlag Dez 2011, 2011. Buch. Condition: Neu. Neuware - The assignment of tasks to resources, especially to human resources, has been a central planning problem over several decades. Today, the executives in most organizations and companies have to cope with resource assignment problems regularly. However, the multi-skill resource assignment problems have not been analyzed comprehensively. Most publications are either limited to special cases in the skill structure or they do not provide operational assignment policies for bigger problem instances. In this book, the problem of assigning telecommunications jobs demanding multiple skills to multiskilled resources is considered. As objective function, the average weighted lead time is minimized. The problem is modeled as Markov decision process and solved optimally with value iteration for small problem instances. Since larger problem instances cannot be solved optimally due to the curse of dimensionality, an approximate dynamic programming approach is proposed based on the Bellman error method. Based on the results, operational policies to allocate given resources even for large problem instances can be derived. In this book, an experimental study is introduced which is based on a major service provider in the telecommunications industry. The defined model and solution technique are used to...



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