Mangalam Campus
Mangalam Hills, Vettimukal P.O
Ettumanoor, Kottayam
Kerala-686631

MANGALAM COLLEGE OF ENGINEERING

Inspire | Imbibe | Innovate

Ph :+91-481-2710120, +91-481-2537053
+91-481-2533711, Fax: +91-481-2533700
Web : www.mangalam.ac.in
E-mail : info@mangalam.in

(Approved by AICTE, Affiliated to MGU / APJ Abdul Kalam Technological University, NAAC Accredited & ISO Certified Institution)

3.3.1.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year-wise during last five years

AY: 2016-17

SL NO	NAME OF TEACHER	TITLE OF PAPER	TITLE OF BOOK PUBLISHED	TITLE OF THE PROCEEDING O THE CONFERENCE/WORKSHOP/SYMPOSIA	NAME OF THE PUBLISHER	YEAR OF PUBLICATION (ACADEMIC YEAR)	NATIONAL/INTERNATIONAL	ISBN NUMBER
1	Dr. Sibu C. Chithran	Teaching Business Models through Business Simulation Games: A Study about Designing Simulation Games for Effective Learner Engagement	Proceedings of the National Conference on Business Models: Business Models for Startups and Small Firms	Proceedings of the National Conference on Business Models: Business Models for Startups and Small Firms	School of Management and Business Studies, Mahatma Gandhi University	2016	National	978-93-5258-523-6
2	Dr. Sibu C. Chithran	Bettering Learning Engagement of Business Graduates for Effectively Facing Business Challenges: A Business Simulation Game Prespective	Managing Uncertainties of Business: A Sicio-Cultural Approach	Managing Uncertainties of Business: A Sicio-Cultural Approach	Managing Uncertainties of Business: A Sicio-Cultural Approach	2016	International	978-93-5254-125-6
3	Dr. Sibu C. Chithran	Emerging Trends in Tra	Managing Uncertainties of Business: A Sicio-Cultural Approach	Managing Uncertainties of Business: A Sicio-Cultural Approach	Managing Uncertainties of Business: A Sicio-Cultural Approach	2016	International	978-93-5254-125-6
4	Mr.Aneesh K.S	Goal Programming Model for Working Capital Optimization at Agro-Chemical Unit			International Journal of Science Technology & Engineering	2016-17	International	2349-784X
5	Prof.ASHA PANICKER		Basics of Electronics Engineering		S CHAND PUBLICATIONS	2017		10HE000005
6	MARIYA VINCENT	A NOVEL FUZZY BASED RELAY NODE DEPLOYMENT SCHEME FOR MULTI HOP RELAY NETWORK		INTEERNATIONAL; CONFERENCE ON ELECTRONICS & COMMUNICATION SYSTEM	INTEERNATIONAL; CONFERENCE ON ELECTRONICS & COMMUNICATION SYSTEM	2016	INTERNATIONAL	
7	MARIYA VINCENT	A NOVEL FUZZY LOGIC BASED RELAY STATION SELECTION SCHEME FOR 4 G CELLULAR SYSTEM		INTERNATIONAL CONFERENCE ON COMMUNICATION & SIGNAL PROCESSING	INTERNATIONAL CONFERENCE ON COMMUNICATION & SIGNAL PROCESSING	2016	INTERNATIONAL	

PRINCIPAL

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

Scanned with CamScanner

2016-17

International Conference on Communication and Signal Processing, April 6-8, 2016, India

A Novel Fuzzy Logic Based Relay Station Selection Scheme for 4G Cellular System

Mariya Vincent, K. Vinoth Babu, M. Arthi and P. Arulmozhivarman

***Abstract*—In 4G and beyond 4G cellular communication systems, multi-hop relay network (MHR) plays a vital role. Improper deployment of relay station (RS) in MHR network creates some severe issues. The conventional studies on RS deployment have not considered the practical issue of link overloading. In this paper, a two-phase, fuzzy based selection and deployment scheme for RSs is proposed by considering link overloading issue. The study also analyses the trade-off between deployment budget, network throughput and overall service coverage. Simulation results show that the proposed scheme performs better than the conventional scheme.**

***Index Terms*—Base station (BS), Fuzzy logic, Selection factor (SF), Service coverage ratio (SCR), Traffic ratio (TR)**

I. Introduction

In the recent years, MHR has been globally considered and accepted in the next generation mobile communication standards such as Long term evolution (LTE), Worldwide interoperability for microwave access (WiMAX) IEEE 802.16j and IEEE 802.16m. IEEE 802.16e standard, comprises of BS, Mobile Station (MS), and Subscriber Station (SS), which aims at a better system throughput. However, to accomplish full coverage, we have to deploy more number of BSs which increases the deployment cost. Therefore IEEE 802.16j introduced the concept of RSs to extend the coverage area. By the proper deployment of RSs, we can reduce the effective distance between two communicating nodes, path loss, power consumption and cost. This also enhances the network capacity and at the same time enables communications at high data rate [1]. In such a system, MS can communicate BS directly or indirectly through RS. Hence, the overall system coverage can be enhanced and more MSs can be included in the system. The BS is connected to a mobile switching center (MSC) which interconnects both wired and wireless network.

IEEE 802.16j defines two types of relays namely transparent and nontransparent. In transparent relay mode, the RSs are deployed within the coverage area of BSs, which improves network capacity. In such modes, RSs are scheduled by BS and the control signals from BS are directly send to the MS, while data traffic is relayed via RS. The nontransparent relay works effectively for coverage extension because they deployed at the cell edge. They are scheduled either by BS or RS. The transparent and nontransparent relay can co-exist in MHR network [2]. Fig. 1 shows the concept of transparent and nontransparent relay modes in MHR networks.

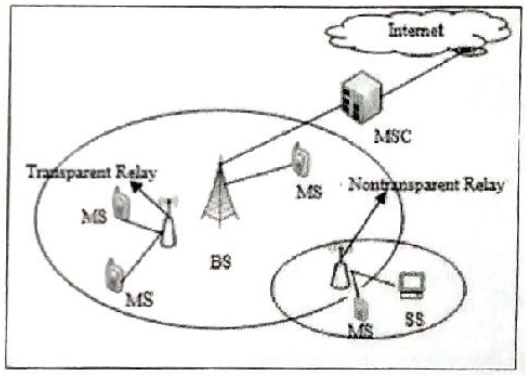


Fig. 1. Concept of transparent and nontransparent relay modes

Many researchers have studied and considered the challenges in MHR network. In [3], authors discussed an optimal deployment of BSs and RSs for IEEE 802.16j which improves the Quality of Service (QoS). But the realistic issues like interference and handovers were not considered. More number of RSs leads to path selection problem because each MS acquires multiple path. Since many of the applications are time bounded, we need an optimum path for transmission. Improper path selection may introduce packet queuing delay. To address this issue, Load Aware Routing Metric (LARM) based path selection and a low complex Burst Profile (BP) based RS deployment schemes were proposed in [4]. The simulation results show that LARM scheme offers an average network throughput improvement of 10.37% over Radio Resource Utilization Index (RRUI) scheme. The practical impairments like link error and channel information feedback delay are not considered in [4]. In [5], Chang et al. put forward RS deployment schemes aiming to determine the best

Mariya Vincent is pursuing M.Tech in Communication Engineering, VIT University, Vellore, Tamil Nadu, India. (email: mariyavnent@gmail.com).
K. Vinoth Babu is Associate professor in School of Electronics Engineering, VIT University, Vellore, Tamil Nadu, India. (email: vinothbab@gmail.com).
M. Arthi is pursuing Ph.D in School of Electronics Engineering, VIT University, Vellore, Tamil Nadu, India.(email: arthimdas@gmail.com)
P. Arulmozhivarman is professor in School of Electrical Engineering, VIT University,Vellore,Tamil Nadu, India.(email: parulmozhivarman@vit.ac.in)

978-1-5090-0396-9/16/$31.00 ©2016 IEEE

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor
IEEE

Available online at www.sciencedirect.com

ScienceDirect

Procedia Technology 24 (2016) 842 – 853

Procedia Technology

International Conference on Emerging Trends in Engineering, Science and Technology (ICETEST - 2015)

A Novel Fuzzy based Relay Node Deployment Scheme for Multi-hop Relay Network

Mariya Vincent[a]*,K Vinoth Babu[b], M Arthi[c],P Arulmozhivarman[d]

[a,b,c,d]*School of Electronics Engineering, VIT University, Vellore and 632014, India*

Abstract

In cellular communication, a multi-hop relay (MHR) network plays an important role by reducing the cost of deployment and extending the coverage area. To achieve high transmission rate and coverage, an efficient placement of relay nodes (RN) is needed in MHR network. In this paper, a suitable deployment scheme is proposed for the RNs to obtain high system performance. By using fuzzy logic, optimum deployment sites are selected for RNs, which results in better throughput and coverage. Simulation results shows that our proposed scheme gives a better throughput and coverage performance than the existing uniform clustering and joint base station and relay station placement (JBRP) scheme.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
Peer-review under responsibility of the organizing committee of ICETEST – 2015

Keywords: Coverage ratio (CR);Fuzzy logic;MHR network;Relay node(RN); Traffic ratio (TR);User node (UN).

1. Introduction

MHR network have been proposed and considered in the wireless communication system such as Long term evolution (LTE) and worldwide interoperability for microwave access (WiMAX) IEEE 802.16j and IEEE 802.16m. In [1], MHR provide solutions to coverage extension by reducing the deployment as well as maintenance costs.

* Corresponding author. Tel.:+919443143314;
E-mail address: mariya.vincent2014@vit.ac.in

MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

2212-0173 © 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
Peer-review under responsibility of the organizing committee of ICETEST – 2015
doi:10.1016/j.protcy.2016.05.125

As per the syllabus of
Dr. A.P.J. Abdul Kalam Technological University, Kerala

Basics of Electronics Engineering

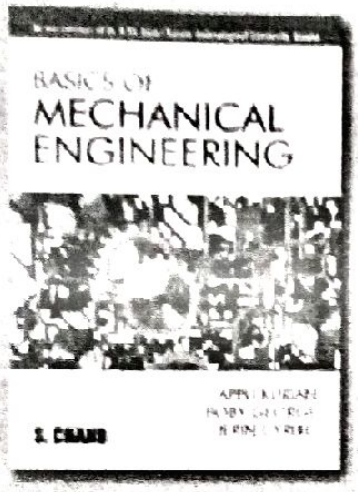
B Basavaraj
Asha Panicker

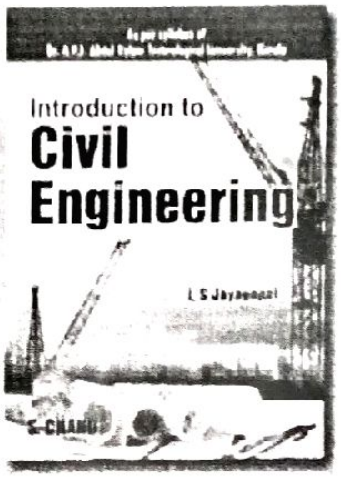
PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

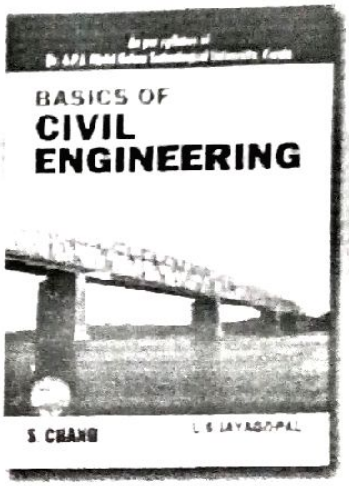
S. CHAND

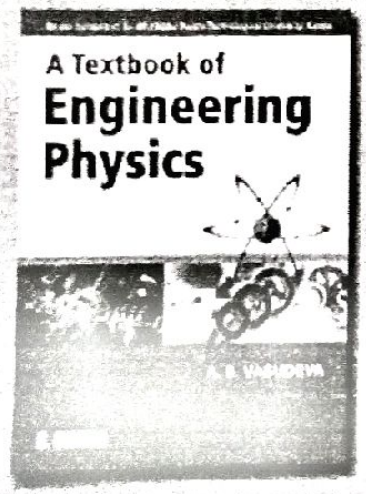
As per the syllabus of
Dr. A.P.J. Abdul Kalam Technological University, Kerala

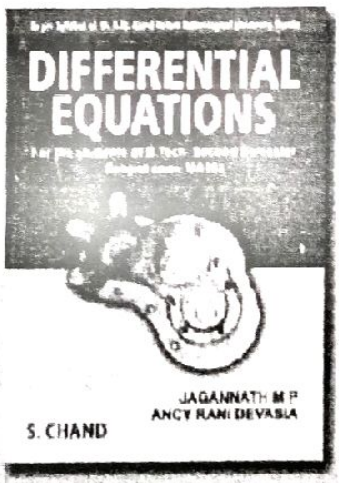
OTHER IMPORTANT BOOKS

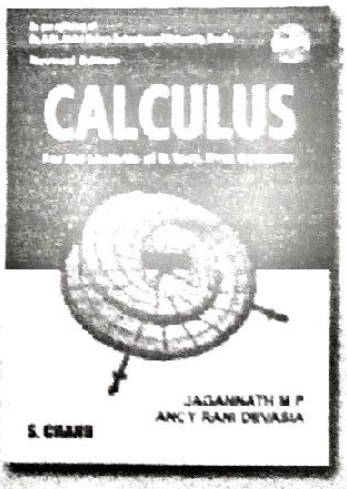












S. CHAND PUBLISHING

A division of S Chand And Company Limited
(An ISO 9001 : 2008 Company)
Website: www.schandpublishing.com
E-mail: helpdesk@schandpublishing.com
Customer care (toll free) No.: 1800-30702850

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

10HE000005

₹ 225.00

1L16VP11

As per the syllabus of
Dr. A.P.J. Abdul Kalam Technological University, Kerala

Basics of Electronics Engineering

IT
COLLEGE OF ENGINEERING

B Basavaraj
Asha Panicker

S. CHAND

Scanned with CamScanner

Contents

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

PRINCIPAL
ANGALAM COLLEGE OF ENGINEERING
Elumandoor

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

Scanned with CamScanner

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

Scanned with CamScanner

CHAPTER

INTRODUCTION TO ELECTRONICS

1.1 Definition

The word "electronics" has been derived from a Greek word "elektron", which means the study of behaviour of an electron under different conditions of externally applied fields. The Institution of Radio Engineers (IRE) has a given standard definition of electronics in the proceedings of I.R.E. Vol. 38 (1950) as that **field of science and engineering, which deals with the study, design and use of devices, which depends on conduction of electricity through a vacuum, gas or semiconductors.** Electronics can be broadly divided into **Analog** and **Digital Electronics.** Electronics mainly deals with the communications of information and/or data handling. Until recently, it was considered as an integral part of Electrical Engineering. But due to its tremendous advancement, during the last few decades, it has achieved its own place in the field of science and technology.

Nowadays, the field of electronics has become the most important branch of engineering in our society. As a matter of fact, it is a field, in which rapid developments are taking place everyday. The electronic devices and gadgets are being used in almost all industries for quality control and automation. Because of the growing applications of Electronics, in almost all fields, the students of all Engineering disciplines have to be taught Electronics at the undergraduate level.

These days, we find that the sphere of Electronics has spread so vast, that it plays an important role in almost every activity of life. It has penetrated into our homes, our work places and our means of communication from one place to another. Electronics has a large number of applications. The development of Electronics has been so fast that many sub-branches of Electronics such as **Communication Engineering, Instrumentation and Control applications, Computer science Engineering, Information Technology, Medical Electronics, Mechatronics** etc., are set up as full-pledged Engineering courses in almost all universities. Electronics makes possible such modern wonders as television, radio, stereo systems, tape recorders, high-speed computers, internet, cellular phone, radar, X-rays etc.

PRINCIPAL
MANGALAM COLLEGE OF ENGINEE
Ettumanoor

Scanned with CamScanner

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

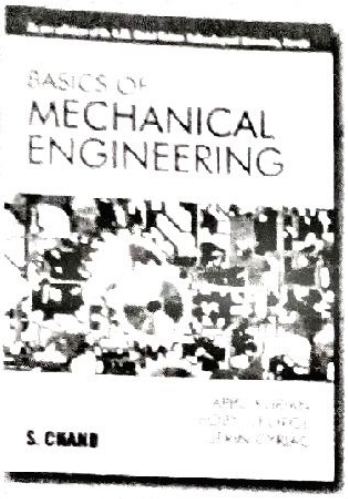
PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

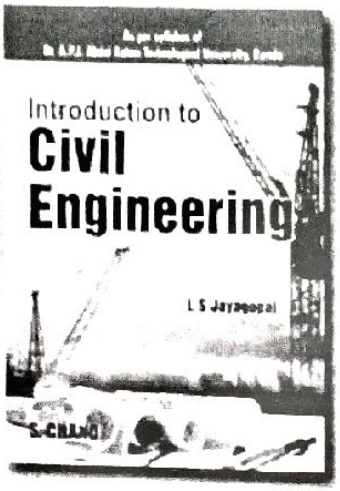
PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING

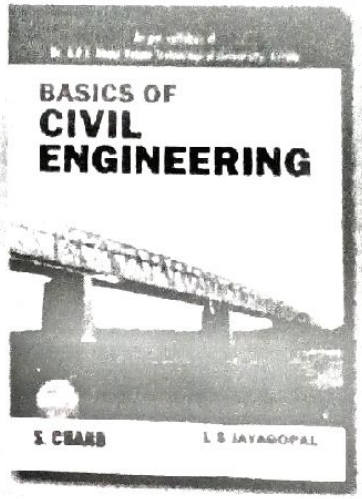
PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

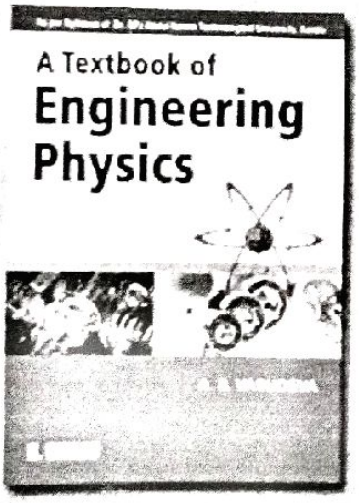
As per the syllabus of
Dr. A.P.J. Abdul Kalam Technological University, Kerala

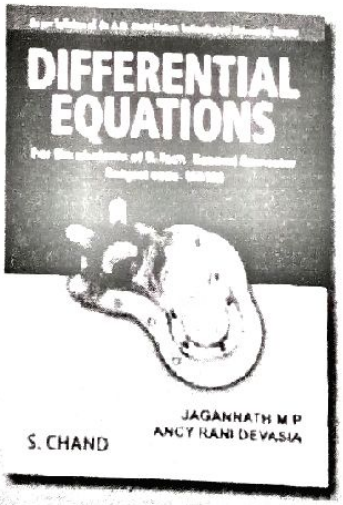
OTHER IMPORTANT BOOKS

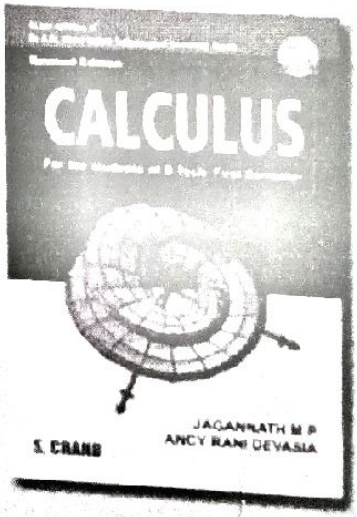












S. CHAND PUBLISHING

A division of S Chand And Company Limited
(An ISO 9001 : 2008 Company)
Website: www.schandpublishing.com
E-mail: helpdesk@schandpublishing.com
Customer care (toll free) No.: 1800-30702850

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING

₹ 225.00

1L16VP11

S Chand And Company Limited

(An ISO 9001 2008 Company)

Head Office: 7361, RAM NAGAR, NEW DELHI - 110 055

Phone: 23672080-81-82, 9899107446, 9911310888 Fax: 91-11-23677446

www.schandpublishing.com; e-mail: helpdesk@schandpublishing.com

Branches

Ahmedabad	Ph: 27541965, 27542369, ahmedabad@schandpublishing.com
Bengaluru	Ph: 22268048, 22354008, bangalore@schandpublishing.com
Bhopal	Ph: 4274723, 4209587, bhopal@schandpublishing.com
Chandigarh	Ph: 2625356, 2625546, chandigarh@schandpublishing.com
Chennai	Ph: 28410027, 28410058, chennai@schandpublishing.com
Coimbatore	Ph: 2323620, 4217136, coimbatore@schandpublishing.com (Marketing Office)
Cuttack	Ph: 2332580, 2332581, cuttack@schandpublishing.com
Dehradun	Ph: 2711101, 2710861, dehradun@schandpublishing.com
Guwahati	Ph: 2738811, 2735640, guwahati@schandpublishing.com
Hyderabad	Ph: 27550194, 27550195, hyderabad@schandpublishing.com
Jaipur	Ph: 2219175, 2219176, jaipur@schandpublishing.com
Jalandhar	Ph: 2401630, 5000630, jalandhar@schandpublishing.com
Kochi	Ph: 2378740, 2378207-08, cochin@schandpublishing.com
Kolkata	Ph: 22367459, 22373914, kolkata@schandpublishing.com
Lucknow	Ph: 4026791, 4065646, lucknow@schandpublishing.com
Mumbai	Ph: 22690881, 22610885, mumbai@schandpublishing.com
Nagpur	Ph: 6451311, 2720523, 2777666, nagpur@schandpublishing.com
Patna	Ph: 2300489, 2302100, patna@schandpublishing.com
Pune	Ph: 64017298, pune@schandpublishing.com
Raipur	Ph: 2443142, raipur@schandpublishing.com (Marketing Office)
Ranchi	Ph: 2361178, ranchi@schandpublishing.com
Siliguri	Ph: 2520750, siliguri@schandpublishing.com (Marketing Office)
Visakhapatnam	Ph: 2782609, visakhapatnam@schandpublishing.com (Marketing Office)

© 2017, S Chand And Company Limited

All Rights Reserved. No part of this publication may be reproduced or copied in any material form (including photocopying or storing it in any medium in the form of graphics, electronic or mechanical means and whether or not transient or incidental to some other use of this publication) without written permission of the publisher. Any breach of this will entail legal action and prosecution without further notice.

Jurisdiction : All disputes with respect to this publication shall be subject to the jurisdiction of the Courts, Tribunals and Forums of New Delhi, India only.

First Edition 2017

Code : 10HE0000(illegible)

This book is for sale in India & other SAARC countries only.

PRINTED IN INDIA

By Vikas Publishing House Pvt. Ltd., Plot 20/4, Site-IV, Industrial Area Sahibabad, Ghaziabad-201010 and published by S Chand And Company Limited, 7361, Ram Nagar, New Delhi -110 055.

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERI
Ettumanoor

Mahatma Gandhi University
School of Management and Business Studies
PD Hills, Kottayam, Kerala-686 560

Proceedings of the

National Conference on Business Models (NCBM2016)

"Business Models for Startups and Small Firms"

25th and 26th February 2016

Edited by
Prof. (Dr) K. Sreeranganadhan

Co-editors
Afsal E.M.
Biju M.K

2016

MANGALAM COLLEGE OF ENGINEERING
ETTUMANOOR
Kottayam
Kerala-686 631

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

Teaching Business Models through Business Simulation Games: A Study about Designing Simulation Games for Effective Learner Engagement

Sibu C. Chithran
Mangalam College of Engineering, Kottayam
(sibuktm@gmail.com)

Arun.V
Farook Institute of Management Studies, Calicut
(arunjithetao@gmail.com)

Entrepreneurship and entrepreneurial education is more important for economic growth than it has ever been. For entrepreneurs, skills and attitudes are equally or even more important than facts and raw knowledge, and an inductive learning approach is therefore most suitable. Business simulation games are widely used for training managerial, technical, and problem-solving skills, based on the experiential learning principles as they significantly increase the motivation and interest level of trainees. (Yuri Merkuryev, Jana Bikovska, 2012). The same method can be effectively utilized to teach Business Models for budding entrepreneurs and better simulation design will result in effective learner engagement. This study is exploring the potentials of business simulation games to teach concepts about business models. The study also proposes a design framework which will help educators to develop better learner engagements.

Key words: Business Simulation Game Design, Learner Engagement, Teaching

1. Introduction

Globalization and the revolution in information technology have induced an intense demand for entrepreneurship and entrepreneurial education is more important for economic growth than it has ever been. (Thurik R., Audretsch D 1998)
Governments and universities worldwide are pushing for education programs that produce more "entrepreneurial engineers" who possess managerial and technical competencies. (Verzat, C., Byrne, J., & Fayolle, A 2009). The recent start up trends in our country is an evidence for the same.

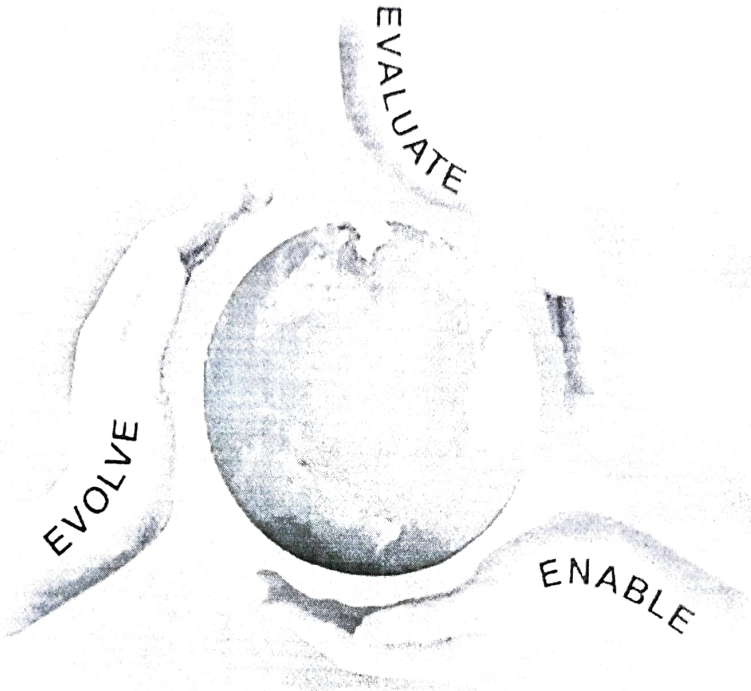
2. The need for study

For entrepreneurs, skills and attitudes are equally or even more important than facts and raw knowledge, and an inductive learning approach is therefore most suitable. Since skills and attitudes completely student centered, a strong relation between the student and the entrepreneurship-subject becomes essential. The school and teachers are only a means for students to reflect upon his or her skills and attitudes. An example of an inductive learning approach is game-based learning, which is getting increased attention from the learning fraternity. (Benek-Rivera J. and Mathews V)

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor
MANGALAM COLLEGE OF ENGINEERING
Kottayam
Kerala-686 631
ETTUMANOOR

Managing Uncertainties of Business

A Socio-Cultural Approach



MANGALAM COLLEGE OF ENGINEERING
Kottayam
Kerala-686 631
ETTUMANOOR

Edito
Dr. Rajesh S. Pynga
Dr. Prakash R. Pil
Dr. Manish Mada
Ms. Bhavana Kapoor

3E
Empowering Professionals

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

BETTERING LEARNING ENGAGEMENT OF BUSINESS GRADUATES FOR EFFECTIVELY FACING BUSINESS CHALLENGES – A BUSINESS SIMULATION GAME PERSPECTIVE

Arun V
Assistant Professor
Farook Institute of Management Studies
Calicut, Kerala, India

Dr Sibu C Chithran
Professor & Head (Management Studies),
Mangalam College of Engineering
Kottayam, Kerala, India

ABSTRACT

There is an increasingly wide 'gap' between the skills and capabilities of graduates and the business world requirements. Management graduates are not effectively equipped to face real time challenges. Business simulation games are found to be effective tools for engaging students in the learning environment. Better learning engagements also results in effective skill acquisition

***Key words:** Engagement, Learner Engagement, Business Simulation Game, Management Graduates, Globalization*

INTRODUCTION

Serious concerns have been expressed about an increasingly wide 'gap' between the skills and capabilities of graduates, and the requirements and demands of the work environment in an increasingly mobile and globalised society (King, 2003; Yunus and Li, 2005).

In our MBA institutions business graduates are poorly engaged in terms of learning and they are ill equipped to face real life business challenges as a result of this. Universities across the globe are increasingly required to produce highly skilled graduates who are able to respond to the ever changing and complex needs of the contemporary workplace (Weil, 1999; Sleezer et al., 2004; Possa, 2006).

MANGALAM COLLEGE OF ENGINEERING
Kottayam
Kerala-686 631
ETTUMANOOR

PRINCIPAL
MANGALAM COLLEGE OF ENGINEERING
Ettumanoor

EMERGING TRENDS IN TRADE UNIONISM IN KERALA

Vishnu Lal
Research Scholar
Bharathiar University
Coimbatore, Tamil Nadu, India

Dr. Sibu C. Chithran
Professor & Head (Management Studies)
Mangalam College of Engineering
Kottayam, Kerala, India

ABSTRACT

We subsist in an era, where the incumbent union government proposes wide changes in the labour laws so as to discourage formation of trade unions in India. On the other side we also witness irresponsible trade unionism in various labour intensive industries across the nation. This questions the very notion of trade unionism, its relevance in the changing environment, its current modus operandi and its future prospects. The study, which is empirical in nature attempts to throw light to the various aspects of trade unionism in Kerala with specific emphasis to the strike organised by worker's agitation at Kanan Devan Hills Plantations (KDHP), Munnar. Since the issue has escalated to the level of gaining national attention, thiswork analyses various contributing factors and suggest probable solutions.

Keywords: *Trade Unionism, Self-served Leadership, Servant Leadership, Workers Environment.*

INTRODUCTION

'The ultimate tragedy is not the oppression and cruelty by the bad people but the silence over that by the good people', said Martin Luther King, Jr.This very famous quote assumed currency in the present labour scenario in Munnar, one of the finest tourist destinations in Kerala, as an unprecedented wave of anti-trade unionism hit hard on its serene tea estates. The deafening silence by the leaders of trade unions over the plight of its member workers who toil for longer hours for a meagre pay and pathetic living conditions made way for a trust deficit between the union and its members. What was once fa[illegible]

MANGALAM COLLEGE OF ENGINEERING Kottayam Ettumanoor
PRINCIPAL MANGALAM COLLEGE OF ENGINEERING Ettumanoor

IJSTE - International Journal of Science Technology & Engineering | Volume 2 | Issue 05 | November 2015
ISSN (online): 2349-784X

Cycle Time and Idle Time Reduction in an Engine Assembly Line

Amith J Prakash
PG Scholar
Department of Industrial Engineering & Management
Mangalam college of Engineeering Ettumanoor

Aneesh K S
Associate Professor
Department of Mechanical Engineering
Mangalam college of Engineeering Ettumanoor

Abstract

This paper focuses on productivity improvement of a tiller assembly line by using operational analysis and assembly line balancing .The existing standard time in the assembly line is too old and inaccurate. A proposal of new standard time has been given to reduce the ineffective time. A heuristic method called Ranked Positional Weighted method is used for assembly line balancing. After the analysis of the existing time required for each tasks non value added time, value added time and production time has been found using stop watch time study. Micro motion study is done to find the ineffective time in each operation.
Keywords: Idle Time, Standard Time Cycle Time, Line Balancing

I. INTRODUCTION

An important problem faced in the production system is that of determining the time it takes to produce a unit of product, in order to thoroughly analyze the problem, the production process for each of product is analyzed. For every manufacturing organization, price of the product primarily compromises of manufacturing cost and desired profit. If a company wishes to increase its profit, one way is to reduce the manufacturing cost with maintaining the quality of the product. Waste reduction, especially the time waste, is an important factor to reduce the manufacturing cost.

II. NEED FOR LINE BALANCING

In an Assembly Line if the workers are not utilized effectively then it results in less efficiency. If the Cycle Time of one work station is high them it will affect the production rate of the whole product, if the line balancing is done in the assembly line. It will result in smooth functioning of the plant without bottleneck. Here this paper focus to do Assembly Line Balancing by heuristic method Rank Position Weighted method (RPW)

MANGALAM