ABSTRACTS

1. BUILDING PREDICTIVE MODELS FOR ELECTION RESULTS IN INDIA – AN APPLICATION OF CLASSIFICATION TREES AND NEURAL NETWORKS

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ABSTRACT

The 2002 Judgment of the Supreme Court of India paved the way for compulsory disclosure of information with respect to the background of candidates in elections. This information includes the assets and liabilities as well as criminal antecedents, if any. The general elections held in 2004 were the first set of elections after the implementation of Supreme Court ruling. Thus, a fairly large amount of data on the candidate' background had become available for the first time. This data was used to build predictive models for forecasting the results of the Legislative Assembly elections of the state of Karnataka. Two different data mining techniques namely, classification trees and artificial neural networks were used to build the predictive models. The prediction accuracy ranged between 90 and 98 percent.

Keywords: Predictive Models, Classification Trees, Artificial Neural Networks, Elections, Data Mining

2. MULTICRITERIA DECISION MAKING ON SELECTION OF DECISION ANALYSIS SOFTWARE

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ABSTRACT

The problem approached in this work dealt with the direct selection of Decision Analysis Software, looking for selecting the more appropriate tool for the organization purposes, providing them the best investment return. The complexity existent in this problem is due to the difficulty found by the decision makers to evaluate the several inherent aspects of this problem. This work presents a multi-criteria decision model for Decision Analysis Software selection.

Keywords: Decision Analysis Software Selection, Multiple Criteria Decision Analysis, SMART

3. COMPARATIVE STUDY OF KNOWLEDGE MANAGEMENT SUCCESS

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ABSTRACT

Knowledge management (KM) is emerging as a significant organizational and management challenge. KM can help shape an organization's technological and organizational innovations for a more effective operation. However, there exist different views among practitioners and even researchers on how a knowledge management program can be successfully designed and implemented in organizations. Thus, this study objective is empirically examining differences between the perceived and the actual success variables for KM. From the results of statistical analysis, the differences between the perceived and the actual success variables for KM are analyzed. The greatest differences exist in benchmarking and

knowledge sharing capability while the least differences are in KM supportive culture and top management leadership and commitment.

Keyword: knowledge management, innovation, KM success

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4. AN EXCEL SPREADSHEET APPLICATION FOR THE CALCULATION OF REORDER POINT OF AN ARMA LEAD-TIME DEMAND WITH DISCRETE STOCHASTIC LEAD TIME

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ABSTRACT

In this research paper, we will look into the calculation of reorder point, safety stock and order quantity of an inventory based on the assumption that the process generating demand data can be forecasted by ARMA Box-Jenkins model. The distribution of forecast errors from the calculation process in Box-Jenkins' ARMA analysis will be used as the measurement of the accuracy with which the reorder point and safety stock are determined. We also discard the constant lead time assumption and allowed it to function as a discrete random variable. An Excel based methodology is provided at the end.

Keywords: Inventory Model, Stochastic Lead Time, Box Jenkins, ARMA, Excel

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5. KANO'S MODEL FOR MULTIPLE PRODUCT DEVELOPMENT

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ABSTRACT

Development of product families or multiple generations of products rather than designing one product at-a-time is becoming more and more essential due to shortening product life cycles and ever increasing competition. Companies need to approach product development by simultaneous design for multiple products and by accurate identification of customer expectations. Kano's customer satisfaction model can help organizations to address both of these issues. In traditional customer satisfaction analyses, linearity is assumed between product performance and customer satisfaction. However, product performance does not always mean a proportional increase or decrease in customer satisfaction since this change also depends on the "type" of the expectation. Kano's customer satisfaction model addresses this issue and assigns a specific category to each customer expectation. Based on the classifications of customer requirements, customer-tailored product development is possible. In addition to Kano model's ability of providing in depth customer requirement information, this study uses Kano classifications to design simultaneous products that may be considered either as product families or multiple generations depending on the nature of the product. Therefore, this study, first, develops a method for using Kano classifications to define multiple products, and then demonstrates the performance of this method on a NASA problem: development of cockpit weather information systems.

Keywords: Kano's Model, Customer Satisfaction, Multiple Generations, Product Families, Aviation, Cockpit Weather Information Systems

6. ACCESSIBILITY AND COVERAGE MEASUREMENT BY NETWORK PEERING INFORMATION

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ABSTRACT

This study provides a new methodology for the accessibility and coverage measurement utilizing the peering Internet sub-network among the Internet Backbone Providers (IBPs). The study provides many different ways to measure accessibility and coverage under peering sub-network. The analysis indicates that private peering and public peering should be treated differently in measuring node's accessibility and network's coverage. The study also shows that these measurements provide a potential decision model when the IBPs have many choices such as survivability and reliability to optimally serve their own network.

Keywords: IBP, peering, accessibility, coverage

7. ANALYSIS OF END-USER SERVICES AND THEIR POTENTIAL LOAD ON THE NETWORK

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ABSTRACT

Packet traffic on a network is generated by a wide variety of processes. With today's multi-taking operating system it is not unusual for a single computer to have several processes (or windows) running concurrently. Each process in turn may be using different protocols with in the TCP/IP protocol suite and each of these protocols presents a possible different profile of packet intensity. This paper will collect packet traffic from different types of packet traffic profiles such as: a single TCP session, multiple TCP sessions, multiple TCP sessions with background packet management traffic, multiple TCP sessions supporting GUI traffic and analyze their intensity and the potential ramifications to network managers.

Keywords: Computer Networks, End-User Services, Statistical Analysis, Network performance analysis

8. DEFINING COMPONENTS AND TAXONOMY OF E-COMMERCE BUSINESS MODELS

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ABSTRACT

In this paper, a comprehensive set of components to develop new and improve existing e-commerce business models has been introduced and explained. These components include: value proposition, value-added e-commerce offerings, supporting resources, revenue and cost models, and value creation. Also, a new taxonomy of e-commerce business models has been introduced. The taxonomy is based on clustering e-commerce models into four classification groups depending on their association with customers and suppliers, and also on their service/support role in e-commerce.

Keywords: e-commerce business

9. STRATEGIES FOR DEALING WITH MEASUREMENT ERROR IN MULTIPLE REGRESSION

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ABSTRACT

Methods for handling measurement error in regression analysis range from assuming that measures are perfectly reliable to explicitly modeling measurement error through the use of multiple indicators. In two simulation studies, we examined the effectiveness of several strategies for incorporating measurement error in regression. First, we compared four strategies: (1) multiple indicator structural equation modeling, (2) a composite indicator structural equation (CISE) model with adjustment for measurement error based on Cronbach's alpha of the composite, (3) a composite indicator structural equation model with no adjustment for measurement error, and (4) a single indicator model with no adjustment for measurement error. The second study explored the consequences of either over- or under- estimating measurement error while using the CISE alpha method.

Keywords: Structural Equation Modeling, Measurement Error, Monte-Carlo Simulation, Multiple Regression

10. USING THEORY OF CONSTRAINTS IN E-LEARNING FOR OVERCOMING INTERNAL, EXTERNAL, CULTURAL, AND INTERNATIONAL CONSTRAINTS

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ABSTRACT

E-learning is an international phenomenon. Effective delivery of E-Learning must overcome external, internal, and cultural constraints; the question is what constraints are critical? Theory of Constraints (TOC) is a systematic approach to identify critical constraints with a series of tools. These tools have improved the performance for numerous organizations in manufacturing industry and service industry. By clarifying intuition with these tools, such as: the cloud, the branch and the target tree, TOC has successfully been applied in education and e-learning. Cultural differences and international boundaries are easily included in the e-learning paradigm.

Keywords: Theory of Constraints, E-Learning, Education, Training, Cultural Differences, Conflict Resolution, Systems Approach

11. ONLINE SHOPPING: WHAT FACTORS ARE IMPORTANT TO SHOPPERS?

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ABSTRACT

The success of online businesses relies heavily upon their ability to attract and retain customers. This study investigates which factors can lead to a more favorable online shopping experience. More specifically, the study identifies the factors perceived as important to online shoppers when making the decision to visit a website, to purchase from a website, to purchase more items, to purchase at a higher

price, and to provide feedback to a website. The better an online business understands the needs of these shoppers, the higher the chance that they can attract and retain customers.

Keywords*: Online Shopping, E-Commerce, Important Factors*

12. APPLICATION OF CORE THEORY TO THE U.S. AIRLINE INDUSTRY

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ABSTRACT

Competition in the airline industry has been fierce since the industry was deregulated in 1978. The proponents of deregulation believed that more competition would improve efficiency and reduce prices and bring overall benefits to the consumer. In this paper, a case is made based on core theory that under certain demand and cost conditions more competition can actually lead to harmful consequences for industries like the airline industry, or cause an empty core problem. Practices like monopolies, cartels, price discrimination, which are considered inefficient allocation of resources in many other industries, can actually be beneficial in the case of the airline industry in bringing about an efficient equilibrium.

Keywords: *empty core, demand, cost, equilibrium, unrestricted contracting, competition, airline industry*

13. RISK MODELING OF HAZARDOUS MATERIALS RAIL MOVEMENT TO INCLUDE A TERRORIST INCIDENT

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ABSTRACT

The enactment of the Hazardous Materials Transportation Uniform Standards Act of 1990 placed added emphasis on the need to assess the risks and benefits associated with the transportation of hazardous materials by all modes. Rail transportation is playing an increasing role in the growing movement of hazardous materials. The events of September 11, 2001 and the real possibility of future attacks have raised the concern level for rail transportation of hazardous materials and the safety of people and property in the event of a terrorist rail incident. Add to this the ever present possibility of an unrelated rail accident involving hazardous materials especially given the growing volume of hazardous materials.
This paper presents a preliminary risk probability model of a train accident or terrorist incident involving hazardous materials by identifying relevant variables and their applicability to rail movement risk analysis. Although the risk of release due to a rail accident or incident is estimated to be small, it is not impossible. Risk of a low-probability high-consequence accident involving a significant release of hazardous materials must be given adequate consideration.
A delineation of a concept of risk assessment and linking that concept to rail transportation quantitative risk analysis is the initial basis for this paper. It is followed by a review analysis of relevant hazardous materials transportation risk models. Based on these existing models, the paper outlines the elements of a risk based modeling analysis to include types and causes of rail accidents. The paper then defines an initial methodology for carrying out a risk assessment of rail transportation of hazardous materials to include risk of terrorist attack. To accomplish any risk assessment of hazardous substances movement during rail transportation, one must consider the complexity and magnitude of chemicals moving through the rail network.

The multiplicity of chemical and physical characteristics of substances, location of manufacturing facility in relation to final destination and volume of cargo tend to further enhance the dimensions and complicate the issue.

***Keywords**: Rail Hazardous Materials Movement, Rail Freight Terrorist Attacks, Rail Risk Models*

14. ERP IMPLEMENTATION AND ITS EFFECT ON A FEW VARIABLES OF ORGANIZATION STRUCTURE AND MANAGER'S JOB

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ABSTRACT

ERP (Enterprise Resource Planning) systems are used in the organizations for information integration and aligning & streamlining their processes for delivering high value to the customers. Through its very use, it influences manager's jobs and the organization structure as well. This paper seeks to evaluate the impact of ERP on organizations, and examines the ways manager's job and organization structures have changed. We have investigated effect of ERP implementation on five dimensions of Manager's job (autonomy, use of power, delegation, people skills and privileged information), five dimensions of organizational structure (specialization, formalization, centralization, standardization and complexity of work flow) and on the flexibility of organization.

A study was carried out in the three plants of a leading motor company in India. It was found that use of power significantly increased in all the three plants. This was thought to be related to the 'change management' associated with ERP implementation in the firm. This could also be due to strategic shift in the firm's position (firm had now become a 'prospector' from its earlier state of 'defender' (in the framework of Miles and Snow et. al. (1978))) which led to increased 'decentralization' and 'delegation' which increased 'autonomy' of the managers. Managers at the middle level felt that there was significant increase in the amount of 'privileged information' available with them. Need for maintaining informal relations for discharging official duties also remains nearly same for senior and middle level managers; however, lower level managers felt that the need for maintaining informal relations to discharge official duties has decreased. It was also found that in all three plants that the specialization, formalization and standardization had significantly gone up. Using this empirical finding and the theoretical ideas of Frederickson (1986) we propose that if a 'defender' implemented ERP then it will lead to erosion of 'autonomy' of its managers. Thus this pilot study brings out that ERP implementation has significant effect on manager's job and organization structure.

***Keywords :** ERP implementation, Influence of ERP implementation on manager's job, Influence of ERP implementation on organization structure*

15. SHOULD WE CONSIDER USER READINESS A PREREQUISITE FOR INFORMATION SYSTEM DEVELOPMENT?

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ABSTRACT

Information system development (ISD) increasingly becomes a means of organizational change and virtually always triggers a wide variety of feelings from all stakeholders who are impacted in various ways. Motivated by the stubborn progress on the success rate of ISD, this research, in contrast to the previous research, hypothesizes that user readiness underpin all other user factors involved in ISD and conducts systematic interviews of 45 diverse ISD projects to examine the responsiveness of user readiness to

project-specific efforts. Our interview findings indicate that user readiness does correlate with the success of ISD although such correspondence varies according to the complexity of ISD, that the motivational aspect of user readiness responds project-specific efforts more slowly than the cognitive aspect of user readiness, and that user readiness also interferes with other kinds of readiness, such as process readiness, data readiness, and more intimately, cultural readiness. The implications derived from our research findings call for a holistic approach to promoting user readiness across ISD projects and should help researchers and practitioners refocus their efforts in search of winning strategies for ISD.

Keywords: Information System Development, Information Systems, Organizational Change, Organizational Readiness, Cognition, Motivation, User Factor, User Readiness, User Satisfaction

16. A TIME-COST BASED PROCEDURE FOR RESCHEDULING JOB ORDERS

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ABSTRACT

Rescheduling of open orders has played an important part in manufacturing systems to deal with production uncertainty, such as machine breakdowns or scraps. To be responsive to the needs of customers, rescheduling becomes an essential component in the time-based competition for manufacturing firms. Nevertheless, when production planners are flooded with numerous rescheduling requests, they may have difficulty in deciding which rescheduling requests should be implemented. Previous rescheduling methods have primarily considered only the timing issue, but not the costs of rescheduling. This paper presents a time-cost based procedure to job rescheduling decision by considering both the timing issue and the penalty costs (i.e. out-of-pocket costs and opportunity cost) of rescheduling. Such a procedure has significant implications for cost/management accountants as well as the production engineers.

Keywords: manufacturing systems, job rescheduling decision

17. THE ROLE OF HAND-HELD COMPUTERS IN RESTAURANTS

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ABSTRACT

This study deals with how hand-held computer technology which is used in restaurants for taking customer order is perceived by employees and employers of restaurants. An empirical survey was conducted with restaurant employees and employers of restaurants where hand-held computer technology is installed. A statistical analysis shows that employees find hand-held computers useful and easy to use. This result confirms what the technology acceptance model suggests in explaining the process of acceptance of new technology by users. However the result of employers' attitude toward hand-held computers indicates that the new IT technology such as hand-held computers is considered as a strategic necessity or a simple cost rather than a strategic weapon. The hand-held computer technology is viewed as a part of IT infrastructure that is required for staying in business. This confirms the IT productivity paradox theory in which the benefit of having a new IT is shown to have no direct impact on the company's financial performance and is transferred to the customers who might enjoy newly-introduced convenience and accuracy in dining at restaurants with the new IT called hand-held computers.

Keywords: Restaurant Hand-Held Computers, Technology Acceptance Model, IT Productivity Paradox

18. ALWAYS LOW PRICES, ALWAYS: MARKETING ORIGINS OF WAL-MART'S DUBIOUS CSR PERFORMANCE

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ABSTRACT

Wal-Mart, the world largest and most successful corporation, also has the unflattering reputation of being so uncaring that it now symbolizes corporate social irresponsibility in the eyes of many Americans. How did the most powerful company become admired as well as feared and despised? Using the company's marketing strategy as a basis for analysis, the current study argues that Wal-Mart's problems with its own employees are not just perceptual but fundamentally due to the company's targeting and positioning choice: the delivery of always low prices to customers has meant that such stakeholder groups as employees have had to be squeezed.

Keywords: *Wal-Mart, marketing strategy*