Vivek Kumar Dubey

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EDUCATION

University of Wisconsin-Madison, USA
PhD: Major: Industrial Systems Engineering, Minor: Marketing Strategy (B2B) — December 2015
Focus: Sustainable Supply Chains – modeling and strategy

MA: Agriculture and Applied Economics — December 2014

University of Wisconsin-Madison, USA — 2000-2003
MBA: Applied Corporate Finance [Mergers & Acquisition]
MBA: Manufacturing and Technology Management
MS: Manufacturing Systems Engineering

MSME: Mechanical Engineering, Oklahoma State University, Stillwater, USA — 1994

BSME: Mechanical Engineering, VNIT, Nagpur, India — 1988

Non-Degree Graduate Studies[i] — 1991-2007

HONOURS

- 2nd place in Burrill Business Plan Competition at University of Wisconsin-Madison — 2003
- Ford Fellowship for graduate studies at University of Wisconsin-Madison — 2000
- Research Assistantship for graduate studies at Oklahoma State University — 1992
- 2nd rank in undergraduate scholarship exam (4 yr. scholarship) — 1988

RESEARCH INTERESTS

- Investigate sustainability-based solutions and contract implications employing theories in Marketing Strategy, Economics, and Management, B2B alliances for innovation, supply chain, and marketing channels (contributing to theory development, modeling, and empirical analysis). Study this in context of large as well as small (SMEs) businesses
- Investigate individual decision making for promoting sustainable products (consumer-firm-institution interaction) and fairness based relationships
- Design of closed-loop supply chains for distribution and manufacturing inter-firm networks (math programming and econometrics based methods)
- Model and analyze complex business issues using operations research and economics tools
- Employ analytical tools including SEM, econometrics, and optimization techniques

TEACHING INTERESTS and EXPERIENCE

- MBA Core courses: Sustainable supply chain strategy and modeling, management science*, probability and statistics*, operations management*, marketing strategy, and sustainable manufacturing strategy*
- Elective courses: Alliances for innovation, supply, and distribution; Sustainable business essentials (modeling and strategy), Quality systems*; Sustainability studies*; Environmental economics
- PhD-level courses on B2B alliances strategies for distribution and supply networks; Innovation strategies; supply chain/ distribution modeling; Research methods

*Taught (see Teaching Experience Statement)

PUBLICATIONS AND WORKING PAPERS

Integrative conceptual framework for the retail industry: leveraging business insights and analytical models

D. Veeramani, A. Krishnamurthy (Professor, Industrial and Systems Engineering), V. K. Dubey, and T. Martagan, 2013**, "**A decision-making framework for automating distribution centers in a retail supply chain," *IEEE Conference on Automation Science and Engineering* presentation, Madison, WI, USA

V. K. Dubey, D. Veeramani, "A decision-making framework for investment in an automated distribution center in a retail supply chain" (Under review, 3th revision, *International Journal of Production Economics*) [Thesis]

Analytical frameworks and models for sustainable businesses: leveraging operations research and economics oriented methods

V. K. Dubey and D. Veeramani, 2017, "A framework for sizing an automated distribution center in a retail supply chain", *Simulation Modeling Practice and Theory*, 75 (2017) 113–126 [Thesis]

V.K. Dubey and D. Veeramani, "Transportation-inventory cost trade-off considerations for DC automation decisions in a retail 1-DC-m-store context" (completed; in preparation for submission) [Thesis]

V.K. Dubey, "Transportation-inventory cost trade-off considerations for perishable products retail context" (proposal stage) [Thesis extension: we propose fuzzy logic based models to capture essential nature of issues involved and propose to apply optimization tools]

V.K. Dubey and D. Veeramani (Professor, Industrial and Systems Engineering), 2011, "A sustainability-based approach to supplier selection and risk reduction in global supply chains," *Proceedings of the CIRP Conference,* Madison, WI, USA. [Beyond Thesis]

V. K. Dubey, J.P. Chavas (Professor, Applied Economics) and D. Veeramani,2018, "Analytical framework for sustainable supply-chain contract management", *International Journal of Production Economics,* 200 (2018) 240-261 [Beyond Thesis]

Study firm-individual-institution (two or three members) interaction for promoting sustainable consumption

V. K. Dubey, 2017, "What makes consumers buy organic products: Determinants of purchase of organic milk", NASMEI (*North American Society for Marketing Education in India*) conference paper presentation [Beyond Thesis]

This paper is now in writing stage. We collect secondary data from individuals and from a retailer to understand the decision-making dynamics. We employ Heckman-two-step model to guide our analysis.

Study firm-firm-institution (two or three members) interaction for promoting sustainable relationship

V.K. Dubey, A. Kumar, (Professor, Marketing Strategy, University of Nebraska, Lincoln), "Impact of sustainability oriented fairness actions in out-of-network dyads on transaction and innovation costs in in-network dyads" (Proposal writing completed; Funding being sought for data collection process to start)

We propose to investigate fairness based interaction between firms in this papers. Data collection strategy and survey has been made. The project needs primary data collection.

V. K. Dubey "Fairness consideration in individual decision-making in B2C and B2B contexts"

We propose to investigate fairness based perceptions for analyzing individual behavior in this paper. The paper is in proposal stage.

V. K. Dubey "Legitimacy consideration in investment decision-making in buyer-supplier relationships"

We propose to investigate legitimacy driven fairness based perceptions for analyzing supplier behavior in this paper. The paper is in proposal stage. We have developed the survey instrument and seeking partners and funding for primary data collection

S. Samanta, V. K. Dubey, B. Sarkar, Measure of influence in social networks (analysis completed, in preparation to be submitted to *Social Networks*)

This paper develops analytical approaches to estimate influence in social networks. The paper has been completed and we are looking for appropriate outlets.

Investigating sustainability of SMEs

V. K. Dubey and D. Roy, "Investigating sustainability of SMEs" (awaiting interviews and data collection)

In this paper we investigate the extant theories for sustainability of SMEs and develop hypothesis to test our theory. We are applying for funds to go to data collection stage.

V. K. Dubey and A. Das, "Factors affecting export potential of India SMEs" (analysis/ writing on-going)

We have collected secondary data and completed analysis. The paper is in writing stage and we will look for suitable outlet.

RESEARCH EXPERIENCE

UNIVERSITY OF WISCONSIN-MADISON, Madison, WI 9/2009-1/2016

Graduate Student Assistant

Research focus area: Modeling, analysis and justification of distribution network reconfiguration and automation strategies in the retail industry

In this area of research, we collaborated with a major US retailer for over 4 years to develop decision-making frameworks for evaluating distribution network reconfiguration and automation strategies. This research entailed the use of mathematical programming, analytical modeling, and discrete-event simulation to create and solve large-scale models representative of real-world retail networks.

- V.K. Dubey, D. Veeramani, "Transportation-inventory cost trade-off considerations for DC automation decisions in a retail 1-DC-m-store context". In this project, we develop an approach to solving a large-scale distribution and supply problem for a retailer. We contribute by developing a simultaneous truck-filling, vehicle routing, and inventory allocation algorithm. We also develop fixed cost, non-linear, and linear formulations. We compare non-linear and linear formulations. We also run sensitivity analysis on delivery frequency.
- V. K. Dubey, D. Veeramani, "A Framework for sizing an automated distribution center in a retail supply chain". In this project, we abstract from practice and develop a simulation-based approach to sizing an automated DC. We analyze and develop simulation models for three modules for an automated DC that would help process a variety of items. We size different buffers. Our results match the industry practice closely.
- V. K. Dubey, D. Veeramani, "A decision-making framework for investment in an automated distribution center in a retail supply chain". In this project, we analyze various costs involved in an automated DC operation and the associated network. The framework helps us evaluate returns on investment on an automated DC based on a comprehensive understanding of costs. The first two projects inform this decision-making framework.

Research focus area: Strategic aspects of sustainable innovation, supply, distribution contracts

In this area of research we focus on the strategic aspects of contracts. We learn from our experience with a major US retailer and the current theories in management strategy, marketing strategy, and operations strategy literature. We propose conceptual models and hypotheses, employ econometrics analysis, and supporting economic and mathematical programming models to draw managerial and policy insights.

- V. K. Dubey, J.P. Chavas, and D. Veeramani, "A cooperative game based framework for sustainable network coordination". In this project, we employ secondary data on costs of production, transportation, contracting penalties, etc., along with formulation to capture risk. We then compare optimal quantity allocation to suppliers policies, cost-risk tradeoff, and evaluate implication on contract strategies.
- V.K. Dubey, A. Kumar, and D. Veeramani, "Impact of sustainability oriented actions in out-of-network dyads on transaction and innovation costs in in-network dyads". In this project, we investigate fairness implications of out-of dyad (retailer-other stakeholder) investment by a retailer on in-dyad (retailer-supplier). The project our observation no changing dynamics in retail industry. We propose to collect primary data through survey instrument and are interviewing executives and managers in retail industry.
- V.K. Dubey, "Decision to buy: Result of self-image and brand characteristic alignment". This research is based on a thorough review of branding (consumption, social, institutional, self-mage aspects) literature and gets to be heart of the question – what is a brand, who creates it, and where does it reside, and how does it affect decision to buy? To develop a model to answer these questions, I plan on conducting interviews and collecting data by working with firms interested in building a sustainable brand.
- V.K. Dubey, "Impact of relational orientation and nature of engagement on alliances contracts outcomes". In this paper, I investigate how opportunism-performance trade-off is accepted by alliance partners. I study routine and non-routine (creative) tasks and discuss incentives to move to higher performance. I propose hypotheses and means of collecting primary data. I would like to pursue this work as it promises to unlock creative potential in contracts.
- V.K. Dubey, "Consumer decision making for organic products: impact of retailer actions and consumer background". I review economics and marketing literature and use econometrics modeling (Heckman two-step model, Probit and Logit models) along with public data to arrive at interesting insights. This paper was developed and approved for an econometrics modeling class on real data set and has potential for publication.
- V.K. Dubey, "Managing coopetition during new product development and deployment process in context of large firms". I review innovation and new product alliances literature from marketing strategy, propose constructs and hypotheses, and evaluate preliminary data sources. I study cooperation, competition, and coopetition (simultaneous cooperation and competition) between alliance partners and study the impact on new product development. This requires further (primary) data collection and interviews with firms that want to improve collaboration within the firm and with alliance partners, including competitors.
- V.K. Dubey, J.P. Chavas, and D. Veeramani, "Contract implications of sustainable groundwater use: market coordination between institution, retailer, and supplier". I propose creation of and coordination between three markets. I employ economic modeling, data collection, and statistical analysis, and develop a tractable formulation that informs contract parameters.

Research application: Application of sustainable business modeling and strategies for purpose improving returns and relationship to stakeholder

This section describes applied research projects where we find an organization and apply principles of sustainable strategies, operations excellence tools, and financial analysis to propose improved stakeholder engagement, improved brand image, and long term profitable growth.

- V.K. Dubey, "Sustainability orientation of top-management-team and its impact on agents (managers) on make-buy-decisions". I propose an approach to evaluate the impact of distance between (distance from level at which stakeholder-top-management team contract) the stakeholders and managers, given a make-buy decision. I employ NRBV and RBV theory, self-interest and social network literature to propose hypothesis that would inform managers who face such a situation.

- V.K. Dubey et al., "Making wind power sustainable and more efficient". We study the industry, carry out life cycle analysis, and chart out a sustainable technology development plan for Vestas. We also propose six strategies that would help Vestas to improve its business model and return to profitable growth.
- V.K. Dubey et al., "Sustainability drivers in fashion industry: Organic cotton and sustainable fibers". We focus on this sector of the economy, that creates significant waste, study the life cycle analysis of a garment, and propose seven strategies for a company, Anvil, to be able to compete successfully.

TEACHING EXPERIENCE

- Taught independent courses in Operations research, Sustainable manufacturing systems design (course includes a business plan), Sustainability and environmental science, Managerial and technical communication
- Proposed electives in Sustainable supply chain design and implementation (Masters and PhD level); Alliances in innovation, distribution and supply (Masters and PhD level); Sustainable business models (Phd and Masters level, includes business plan for Masters); Quality systems; Econometrics; Network analysis and applications (Masters and PhD level)
- Teaching assistant for graduate level course on e-business technologies, strategies and applications. This course, targeted at MBA and MS students, deals with business and marketing planning for creating online businesses, and leveraging e-business technologies to transform traditional business processes and operations. The course not only teaches e-business concepts but also engages student-teams in real-world industry projects to apply their learning and deliver value to the client.
- Teaching assistant in senior design capstone project (undergraduate) course. This course reinforces student learning of quality and productivity improvement, operations excellence, project management and communication. Students work with a company on a system design or process improvement project.
- Teaching assistant for a graduate course on quality management and continuous improvement. The course introduces students to quality management tools through lectures, video materials, workshops, and projects.
- Teaching assistant for undergraduate course in operations management course. The course introduces fundaments of operations management (manufacturing, service, and supply-chain management).
- Experience with 'blended learning' where the goal is to enrich student-learning experience through more hands-on and team-based activities in the classroom. I helped develop online videos, lecture material, workshops, and quizzes. In this 'flipped classroom' model, the in-class time is devoted to engaging the students in active learning through illustrative examples and exercises.

INDUSTRY EXPERIENCE

I have eighteen years of experience in industry in business planning and strategy, leadership, management of functions (such as operations and supply chain, marketing, business development, engineering and research, and change management), and in building alliances. I would be able to engage with business executives to add sustainable value to their business. Specifically, I have skills in following three areas:

- **Operations excellence**: Project Management; Operations Management; Lead Time Reduction; Process Excellence
- **New Product Introduction:** Customer Needs Analysis; Six-Sigma/Lean; Stage Gate Planning; Change Management
- **Business Development:** Business Strategy /Planning; Technology Valuation; Business Development; Financial Analysis

CATERPILLAR INC., Joliet, IL 5/2008-9/2009

Leader/Manager

Led/Managed/Supervised Global NTI and NPI projects, Global Six Sigma projects for business strategy, growth strategy implementation, process improvement. These resulted in multi-million $ savings.

LARSEN AND TOUBRO, Baroda, INDIA 3/2006-6/2007

Sr. Business Development Manager

- Developed international business for Engineering/Manufacturing services
- Led a team of Engineering and Marketing professionals, including coaching and guidance

- Made sales pitches to CXOs – a team effort between several business units on multimillion$ projects
- Developed contracts, work orders, work estimates documents for new and prospective projects
- Developed Marketing, Financial, and Business Plans

PARKER HANNIFIN CORP., Youngstown, OH 2003-2006
Manager, Business and Market Development
Responsible for identifying strategic business opportunities and lead role in setting up business units, determine appropriate parameters for making ventures successful and profitable. Reported to Corporate VP of Business Development and Group VP Manufacturing and Technology

- Implemented stage gate process, coordinated NPI budgets for VC-type funding for $1.8B Group, coordinated IP strategy, coaching in market driven management
- Presented business plans, financial analysis, acquisition valuations to top executives
- Key role in a small team launching 4 business in 2.5 yrs: Identified/developed customer partnerships, coordinated customer needs analysis, strategic pricing, financial models, and partner contracts
- Completed valuation for two targets: Size $9M and $2.3M respectively
- Developed Strategic Businesses Plans: market analysis, market penetration strategy, supply chain/manufacturing strategy, investment strategy, and financials for energy systems, water desalination, transmissions and actuators

UNIVERSITY OF WISCONSIN-APPLIED CORPORATE FINANCE, Madison, WI 2001-2003
Business Development and Financial Consultant
Working in small teams consulted with small business and large corporations for valuation of technology, business line extensions, licensing, and target evaluation.

- *WISCONSIN ALUMNI RESEARCH FOUNDATION*: Developed DCF models, decision tree and real option valuation models for technology licensing
- *DELTANOID PHARMACEUTICALS*: Researched the osteoporosis industry and helped develop a revenue and DCF model, sensitivity analysis, real options valuation for acquisition resulting in improved valuation and acquisition by large pharmaceutical company
- *3M*: Developed a technology valuation model for Fuel Cells including research and analysis
- *SONOPLOT*: Initiated a new business venture with approved $100,000 VC funding for Drug Discovery; Identified a technology and a product definition based on market needs; completed research, revenue model, production scenario and investment analysis, channels evaluation and detailed financial valuation; pitched the company to Life-Sciences division of a large company
- *CECOR*: Completed research, revenue modeling, customer interviews, and operations evaluation resulting in financial valuation of current business and developed a plan for business expansion

UNIVERSITY OF WISCONSIN – CENTER FOR QUICK RESPONSE MANUFACTURING AND ERDMAN CENTER FOR OPERATIONS AND TECHNOLOGY MANAGEMENT, Madison, WI 2000-2003
Business Process Consultant
Working in small teams consulted with small businesses and large corporations for improving business process for Manufacturing, Supply-Chain and Change Management.

- *ELECTRONIC THEATRE CONTROL*:[Lead Time Reduction] Completed values stream mapping, capacity planning-MPX software, recommended a cellular approach to reduced lead time by 40%
- *BOUMATIC INC*: [Quality and Process Improvement] Completed process mapping, value chain, and root-cause analysis, product evaluation for Milk Receivers resulting in product / process improvement
- GE: [Change Management for Process Improvement] Mapped material flow in a Medical Devices, designed and implemented bar-coding for improving information and material flow; Senior management accepted recommendations and approved $16k investment for bar-coding hardware
- 3M: [Supply Chain Management] Developed a new approach to safety stock evaluation for intermittent demand for a Abrasives supply chain; Developed and implanted Bootstrap algorithm for determining service levels

- EATON CORP.:[Six Sigma] Evaluated and developed the DMAIC approach for Hydraulic Pumps

EATON CORPORATION, Eden Prairie, MN 1997-2000
Project Engineer/Manager

- Led a team for new product planning, development, project execution: Total Budget $2.5M
- Worked closely with customer to develop seven new applications
- Completed a six sigma project for improving manufacturing process efficiency
- Developed and managed suppliers for variety of components
- Developed costing approach, implemented cost savings for new valve: savings $250k/yr

AUTOMATED ANALYSIS, Ann Arbor, MI 1995-1997
Project Manager @ client Caterpillar Inc., Joliet, IL

- Led a multi-location team for developing a new pump–coordinated efforts with three business units, plant, lab and suppliers; Result successful launch; Total Buget:$2M
- Worked with OEM plant and Distributors to ensure Voice of Customer capture and implementation
- Developed quality processes with suppliers for new pumps/valve parts and for assembly

MANNESSMANN REXROTH [BOSCH], Wooster, OH 1994-1995
Project Engineer

- Worked with customers, manufacturing, and testing to valves to specifications
- Developed ProE models for variety of components including manufacturing tool paths

LARSEN & TOUBRO, Bangalore, India 1988-1991
Operations Manager

- Led establishment of a new distribution facility – managed receipt/ dispatches/ shop scheduling;
- Worked with internal/external auditors to ensure compliance
- Managed suppliers for components for loader backhoe, hydraulics, engine, transmission, and cab
- Developed product BOM structure using dBase software: Self initiated and led IT project
- Executed contracts and coordinated procurement of structural steel worth $950,000
- Developed and supervised dBase/Foxpro application for distribution management: IT initiative

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[i] Over the years, I have made a strong effort to continuously keep in touch with education and sought to improve my understanding of how organizations operate. Below, I also mention why I did not complete two degrees (at University of Utah and at IIT-K) I initially planned on completing. I have now completed the quest of making progress in these two degree programs.

University of Utah-Salt Lake, Enrolled in PhD program, Marketing Strategy, 7/2007 to 5/2008

I spent one semester on campus and one semester off-campus (taking care of my family). I could not get back in time to continue my on-campus work as, at the time, my family needed attention. I continued my quest to understand the business and marketing strategy at University of Wisconsin-Madison (which is strong in the area of Marketing Strategy). At University of Utah, I was able to get a good start in the strategy area. I completed three PhD seminars (contracts, consumer decision making, qualitative methods), economics, and statistics classes, and wrote a proposal. I was also able to complete two seminars that were taught and coordinated by ISBM (Pennsylvania State University) on alliances in innovation and distribution channels. I built on this experience at University of Wisconsin-Madison by developing research projects with help of marketing strategy faculty at University of Wisconsin – Madison (where I have now completed four strategy based research seminars).

University of Nebraska-Omaha, Non-degree student, 5/1997 to 12/1998

I was engaged with the university as a part-time student (I worked full-time) and focused on management information systems area. Since Eaton Corporation transferred me to another city, I did not complete my degree. But, I was able to build a background in business fundamentals and information systems.

IIT-Kanpur, Enrolled in M.Tech program, Industrial Management Engineering, 7/1991 to 12/1991

I had graduated from VNIT in Mechanical Engineering and worked for 3 years when I entered the program. I had applied to management programs in elite engineering programs in the country and to engineering programs (in mechanical engineering). I had applied to both the departments at IIT-Kanpur. I chose the IME program and after one semester understood that although I was very interested in the subjects (both, operations research and management), I wanted to finish my pursuit in mechanical engineering. By that time, other top schools had already filled their seats (I had to give up IIT-D seat in Mech. Engineering) and I did not want to wait another year. Moreover, IIT-Kanpur happened to misplace my admissions document and asked me to wait another year. So, I decided to enter the MS program at Oklahoma State University-Stillwater. The program was recommended to me as it was the only school focused on hydraulics in the USA at the time. This was the field of my work at the time.

I completed MS- Manufacturing Systems Engineering and an MBA in 2003. This was motivated by my great experience at IIT-Kanpur. I later enrolled in PhD program to complete my pursuit that I started at IIT-K.