

# **Operations Management in Not-For-Profit, Public and Government Services: Charting a New Research Frontier**

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Public and non-profit organizations such as government agencies, social service organizations, cultural, educational and health-care institutions, membership and professional associations, advocacy organizations, religious, charitable and other not-for-profit organizations play important and significant roles in societies around the globe. Not-for-profit organizations can be broadly characterized as entities that attempt to fulfill some charitable purpose and operate without distributing profits to its shareholders. Government and public agencies are in many ways similar to not-for-profit organizations, but with the often-added complexity of being responsible for imposing/enforcing regulatory measures.

In a recent article in *Harvard Business Review*, former United States Senator and Presidential Candidate Bill Bradley and his co-authors state that the total assets for not-for-profit sector in United States exceeded US \$2 trillion and total revenue exceeded over US \$700 billion in year 2000 (Bradley et al., 2003). While governance, financial performance and marketing-related issues for not-for-profit organizations are widely discussed in business magazines and journals, the unique operational characteristics and constraints for not-for-profit, government or public organizations rarely get the attention they deserve (Keating and Frumkin, 2001). At the same time, partly because of shrinking funding levels and partly because of growth in the sector, both the not-for-profit and public organizations have been experiencing increased competition for scarce resources.

As the readers of *Journal of Operations Management (JOM)* very well know, JOM has had a long history of encouraging articles exploring new frontiers in the field. Following this rich tradition and encouragement from editor-in-chief Robert Handfield, we invited papers for a special issue of JOM on *Operations Management in Not-For-Profit, Public and Government Sectors* in early 2003. The call for papers encouraged researchers to submit manuscripts related to a wide range of topics including exploring the similarities and differences between operations management practices in not-for-profit organizations, public sector/government agencies and for-profit corporations; strategic consensus

among/between multiple stakeholders (e.g. donors, employees, volunteers, users, clients, policymakers, community); measurement of operational performance and relationship between operations strategy and performance; issues governing product, service and process design/ innovation; unique issues related to quality management; the role of information technology and various operational tools, techniques and concepts in increasing productivity and efficiency; and other topics as appropriate to effective operations management of not-for-profit or public sector organizations. The call for papers explicitly encouraged the researchers to submit papers based on interdisciplinary topics and using a wide range of methodologies (conceptual, empirical, analytical and case-based research methods). We are pleased to report that the call for papers for the special issue was very successful and that we received 55 manuscripts for consideration for publication from many different countries.

All papers submitted were first evaluated by at least two editors for their appropriateness to the mission and objectives of the special issue. If deemed appropriate, the paper was sent out to two to three anonymous referees using a double-blind process. After the completion of the review process, the final acceptance/rejection/revision decision was made by the entire guest editorial team. We would like to thank the referees listed in Appendix A, who volunteered significant time and effort to provide valuable feedback to the author(s) in a relatively short time allotted for reviewing the papers.

The current issue includes seven papers which cover a wide range of services including performing arts, charitable organizations, social services, education and health care. The key themes covered by these papers include:

- Comparative studies across the for-profit, not-for-profit and government. Three papers in this issue fit that description.
- Strategic consensus among/between multiple stakeholders in not-for-profit and governmental organizations. Two papers focus on such issues, one on the loyalty of volunteers in service agencies and in using the Internet to provide ticketing services to symphony goers.
- Measurement of operational performance and the relationship between operations strategy and performance. Two papers provide models that are intended to manage the design tradeoffs necessary for effective performance.
- Descriptions of the issues that govern product, service and process design/innovation in not-for-profit and public organizations. All seven papers in this issue deal in one way or another with such issues.

- Quality management in those organizations. Two papers deal specifically with quality management across a range of hospitals and nursing homes, while others deal with the determination of quality in the complex political and managerial environments of not-for-profit and public sector organizations.
- The role of information technology and various operational tools and techniques and concepts to increase productivity and efficiency. One deals specifically with decision-making related to information technology for ticketing, while two others utilize mathematical modeling to locate public facilities and to deal with allocation of resources where demand exceeds available resources.

We are impressed with the range of interdisciplinary approaches represented in this issue as suggested in the call for papers. The range of approaches was even wider in the entire set of papers submitted, many of which will appear later in this journal. What was apparent to those of us that read many of the submissions is that there is not a clear consensus in the management literature about effective management of these organizations. Some articles based on the U.S. literature cited market failure as the basis for their existence and intimated that they could never be efficient, whereas articles from other countries seemed to accept them as a perfectly normal part of the landscape.

Readers will note that in many cases the services provided by these organizations are also available at some times and in some places from for-profit providers. Therefore, the differences lie in the complexity of the conditions – political, economic and social – that lead to their existence. They arise not out of an impersonal market relationship, but out of highly personal values such as charity, volunteerism, artistic merit, social responsibility, equality of access and personalized service. These all have had to be worked into the operational approaches offered in the situations described. Further we believe that for-profit organizations could learn a great deal from the way public sector services engender such traits in their staff.

The literatures cited go well beyond the traditional references of operations management concerning services. They include services marketing, economic modeling, survey research, public administration and organizational behavior. Given the lack of convergence among the references among the seven articles, one might argue that there is a real need for an applicable body of theory specifically applicable to the not-for-profit and public sectors. Perhaps this issue will spur more thoughtful discussion along those lines.

## The Individual Papers

### *Managerial Choice and Performance in Service Management: A Comparison of Private Sector Organizations with Further Education Colleges*

Chris Voss, Nikos Tsikriktsis, Benjamin Funk, David Yarrow and Jane Owen draw on the extensive U.K. data set of the International Service Study to compare 62 further education colleges with 229 private sector respondents. They cite a literature that is generally negative about the efficiency of public sector institutions and develop hypotheses about human resource management systems and quality procedures in the two types of organizations. Using a structural equation model of the service profit chain involving human resource management practices leading to employee satisfaction and quality procedures and employee satisfaction leading to service quality and all leading into customer satisfaction, they found that, while employee satisfaction was much lower in the public sector colleges, quality procedures and service quality were not distinguishable between the two. Overall, the same service profit chain model seemed to apply in both sectors. However, human resource management practices were perceived as poorer in the colleges leading to lower employee satisfaction and consequently to lower customer satisfaction levels. Anecdotal evidence pointed to remote management, unfulfilled expectations of collegial decision-making, lack of full-time status, heavy workloads, bureaucracy and inadequate facilities. What is not distinguished in this research is the importance of professionalism and professional expectations versus managerial expectations in this comparison.

### *Linking Publicness to Operations Management Practices: A Study of Quality Management Practices in Hospitals*

In the other comparative study, Susan Meyer Goldstein and Michael Naor work to operationalize the concept of publicness and apply it across the range of for-profit, not-for-profit and public hospitals. They note that all three winners of the Baldrige Award in health care have been not-for-profit organizations with religious heritages. Hospitals are a highly regulated industry with accreditation requirements for quality improvement programs. However, they do differ in teaching mission, reliance on public funding, and in ownership. Using public data and a questionnaire, they found a relationship between quality program behaviors and two factors, attention to public responsibility and compliance with regulation which were much stronger than the more obvious factors of teaching mission or extent

of government funding. They argue that this is significant for research in the light of earlier studies that outlined problems with quality efforts in public sector organizations.

An additional contribution of their work is the development of an empirically defined continuum of publicness as it relates to quality management in hospitals. By developing a dimensional approach to publicness, Susan Meyer Goldstein and Michael Naor provide a richer way of defining public organization than prior definitions that classified organizations as for-profit or not-for-profit.

*The Service Volunteer-Loyalty Chain: An Exploratory Study of Charitable Not-For-Profit Service Organizations*

Priscilla Wisner, Anne Stringfellow, William Youngdahl and Lenore Parker develop an analogue of the service profit chain for not-for-profit organizations which we call the volunteer-loyalty chain. It identifies some of the important antecedents of volunteer satisfaction that lead to further donations of time, donations of money and recruitment of other volunteers that can help sustain the organization. Using a questionnaire administered to paid and unpaid volunteers, they found that the motivations for donating money and for donating time are distinct. Volunteer attitudes were found to be affected by a number of operational choices, such as flexibility in volunteer schedules, orientation and training, social interactions with other volunteers and staff, volunteer recognitions and rewards, and work design. One surprise was that client interactions did not seem to influence volunteer satisfaction as expected. One particularly significant finding was the positive impact of asking volunteers to reflect on the value of the work they were contributing and the mission of the organization.

*Operational, Economic and Mission Elements in Not-For-Profit Organizations: The Case of the Chicago Symphony Orchestra*

John Olson, James Belohlav and Kenneth Boyer report on their survey of the users of the on-line ticketing service of the Chicago Symphony Orchestra. This site also provided information about the mission of the Symphony. This mission description was also supported with information on the history of the organization, music history, music clips and other data including the Symphony's schedule of performances. One hypothesis was that use of the educational tools and the ordering tools together would enhance consumer satisfaction.

The web site was originally intended to answer questions about the concert schedule, but the addition of the ability to see seat locations and available seating and to purchase tickets has led to increased sales and reduced operational costs, once the bugs were worked out. This has led the

Symphony to move away from call centers and toward web-based marketing of individual performance seating, eliminating the ticket-inventory control problems presented by multiple distribution channels. The study also categorized the users according to intensity of use and whether it pertained to ticket purchases, concert information, or both. Consumer satisfaction with the web site increased with familiarity and breadth of use. Ticket purchasers were especially well supported by the ability to see seat locations and availability visually. MANOVA analysis showed strong interactions between the two uses on cost, convenience and system effectiveness. High utilization of the ticket ordering tool set and a positive perspective on Internet ordering led to significantly higher assessments of system effectiveness, ease of interaction, overall impression, convenience, and transaction accuracy. High use of the informational (educational) tool set was less likely to lead to positive attitudes on overall impression, convenience and ease of interaction, but interestingly led to significantly less perceived cost to the patron. The authors conclude that the educational mission of the symphony and its economic requirements could both be supported by an effective web site and that there was a positive relationship between the use of the two.

#### *Using Information on Unconstrained Student Demand to Improve University Course Schedules*

Gary Thompson expands the Hinkin and Thompson heuristic model for class scheduling to take into account unmet student demand for courses. This is in response to the complex set of criteria that involve professor and classroom availability and teaching workloads, as well as student graduation requirements (especially transfer students) to enhance graduation rates and student satisfaction over time. First, they collected on-line student preferences for courses independent of the scheduling process and used these unweighted preferences in the simulated-annealing-based heuristic solution procedure which took into account class conflicts and core course requirements, as specified by faculty and specified by students. It turned out that the information supplied by students was more effective in producing better schedules and so was the data on unconstrained demand. Using the unconstrained student preferences and constraint information over a three-semester planning horizon, about 20% of students received improved schedules. The author observes that this improvement was achieved with relatively little increased effort, although only 32–37% of students offered unconstrained preference data. The author does not believe that the solution would be particularly sensitive to higher participation of students in the preference-gathering process, although he recognizes that this is a researchable question. Another researchable question is whether students would actually register in

response to their stated preferences for courses, or whether other preferences like sleeping late or long weekends might intervene.

#### *Efficient Service Location Design in Government Services: A Decision Support System Framework*

Ram Narasimhan, Srinivas Talluri, Joseph Sarkis and Anthony Ross develop a decision support system for the location of motor vehicle registration and driver licensing and identification issuance in the State of Michigan. The modeling takes into account budget, branch office efficiencies, system-wide efficiency, demand requirements and multiple distribution channels available for these services, including web, telephone, mail and facsimile. Seventeen million out of 21 million annual transactions are handled at 169 branch locations and the legislature mandates at least one branch in each of the State's 79 counties. Legally, certain processes such as driver license issuance could only be handled in person. The authors demonstrate the use of allocative data envelopment analysis (DEA) from productivity measurement and mixed-integer programming (MIP) for core service delivery location specification.

The analytics were designed to serve as part of a decision support system for the agency to use in response to varying funding levels and efficiency score cutoffs. The agency could also consider adding capacity at the most efficient branches with offsetting reductions elsewhere. It was also possible to calculate the minimum budget level at which a feasible integer solution could be achieved. Sensitivity analysis could also be used to determine the impact on system costs and effectiveness of shifting consumer demand to alternative distribution channels such as the web or telephone.

These authors also offer some observations on working with a real team of agency managers, namely the need to "sell" the effectiveness of models to management, and then need to bring them along through successive steps of the analysis to achieve "buy-in" of both policymakers and implementers. They also speculate on the value of adding a Markov chain model to study the effects over time of changes in distribution channels.

#### *Comparing Quality of Care in Non-Profit and For-Profit Nursing Homes: A Process Perspective*

Using data from a sample of nursing homes, Susan Chesteen, Berit Helgheim, Taylor Randall and Don Wardell test the economic hypothesis that quality in non-profit healthcare entities exceeds quality in for-profit counterparts. They state that to date, research examining differences in quality between for-profit and non-profit nursing homes has focused on a direct link between outcome quality and non-profit status and is non-conclusive. The authors argue that nonprofit or for-profit status and outcome quality are linked via two intermediate factors, namely process quality and input quality. They report

that process quality is indeed higher at non-profit nursing homes than for-profit nursing homes, but that input quality is lower. They also report that different aspects of process quality are tied to better outcome quality, but report several notable exceptions.

### **Breadth of Disciplinary Approaches**

We would be remiss, if we did not complement those who submitted articles for the breadth of disciplinary approaches used. Five of the articles are based on empirical methods, while only two utilize the modeling approaches that seem to dominate so much of current operations management literature. One might take that lack of convergence as evidence that this field has been under-researched. However, we see it as an answer to the charge of Vargo and Lusch (2004) that services marketing and by implication, service operations are mired down in old nations of a “goods-based, manufacturing model” emphasizing “intangibility”, “heterogeneity”, “inseparability”, and “perishability”. Yet, even with this breadth of research paradigms available to our actual and potential authors, this lack of convergence on even why and when these sectors should be delivering services and how effective they are should give us pause. Some of this lack of convergence may be cultural (see Mattila and Patterson, 2004), but it may also be grounded in the corporate cultures that attract servers and clients to these sectors as well as cultures that cross countries and continents. However, it seems to us that some consensus on these issues would be helpful for future research designs.

Appendix A. Reviewers for the special issue

First name	Last name	University
Sal	Agnihotri	Binghamton University
Sanjay	Ahire	University of Dayton
Tor	Andreassen	Norwegian School of Management
Uday	Apte	Southern Methodist University
Colin	Armistead	Bournemouth University
Ravi	Behara	Aorida Atlantic University
James	Belohlav	DePaul University
Elliot	Bendoly	Emory University
Kurt	Brethauer	Indiana University
Kyle	Cattani	University of North Carolina, Chapel Hill
Richard	Chae	University of Southern California
Lori	Cook	DePaul University
David	Dilts	Vanderbilt University
JoAnn	Duffy	Sam Houston State University
Rebecca	Duray	University of Colorado at Colorado Springs
Fred	Easton	Syracuse University
Bo	Edvardsson	Karlstad University
Joy	Field	Boston College
James	Fitzsimmons	University of Texas, Austin
Ram	Ganeshan	College of William and Mary
Ankur	Goel	University of Texas, Austin
Susen Meyer	Goldstein	University of Minnesota
John	Goodale	University of Oregon
Evert	Gumesson	Stockholm University
Janet	Hartley	Bowling Green State University
Julie	Hays	University of St. Thomas
Gregory	Heim	Boston College
Daniel	Heiser	DePaul University
Debbie	Kellogg	University of Colorado at Denver
Ken	Klassen	Brock University
Mike	Lewis	Warwick University
Barbara	Lewis	University of Manchester institute of Science and Technology
Ann	Maruchek	University of North Carolina, Chapel Hill
Jan	Mattsson	Roskilde University
Kathleen	McFadden	Northern Illinois University
Kathleen	McKone Sweet	Babson College
Larry	Menor	University of Western Ontario
Jack	Meredith	Wake Forest University
John	Olson	DePaul University
Chiara	Orsingher	Universit� di Bologna
Gerhard	Plachka	DePaul University

**Appendix A (Continued)**

First name	Last name	University
Mellie	Pullman	Cornell University
Taylor	Randall	University of Utah
Gilles	Reinhardt	DePaul University
Eve	Rosenzweig	Emory University
Scott	Sampson	Brigham Young University
Rachna	Shah	University of Minnesota
Vicki	Smith-Daniels	Arizona State University
Gregory	Stock	Northern Illinois University
Srinivas	Talluri	Michigan State University
Peter	Tarasewich	Northeastern University
Mohan	Tatikonda	Indiana University
Gary	Thompson	Cornell University
Zeynep	Ton	Harvard University
Nikos	Tsikriktis	London Business School
Anita	Tucker	University of Pennsylvania
Chris	Voss	London Business School
Jacob	Wijngaard	University of Groningen

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