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Gabriel Bitran

President, POMS 2004

Nippon Telephone and Telegraph

Professor of Management

M.I.T. Sloan School of Management

Email: gbitran@mit.edu

LOOKING FORWARD

I would first like to express, as a member of POMS, my deepest gratitude to Aleda Roth for the outstanding job she did during her tenure as President. She did not hesitate to sacrifice her personal and professional lives for the benefits of POMS and the OM communities, she is an inspiration to all of us. Her accomplishments defined a very high bar for future presidents and I am sure that we will recall her administration, for years to come, as a major milestone in the history of POMS. I would also like to thank the members of Aleda's team for their excellent contribution to the success of her tenure as president.

In the last two decades, the academic Operations Management (OM) community has made major contributions to the field; however, one could argue that it has not led the manufacturing revolution. Of course, there were several individual contributions that were right on the mark, but the community did not lead. The same cannot be said of practitioners who showed the way.

In looking forward, the academic community faces an important moment. We have one more opportunity to reinforce our relevance to the practice of OM. In particular, Supply Chain Management (SCM) and Revenue Management (RM) are two areas that require a sophisticated way of thinking, and cannot be managed without a solid foundation in methodology. They are essential to the success of manufacturing and service activities. Fortunately, this fact did not go unnoticed and the academic OM community has allocated a substantial fraction of its research efforts to SCM and RM.

To keep my message short, allow me to use RM as the focus of these comments. To make use of RM procedures it is necessary to think in terms of probability distributions and tradeoffs over time to optimize the use of human and material assets, while matching supply and demand.

Continued on page 3 ...

Upcoming POMS Conferences

16th Annual POMS Conference, April 29-May 2, 2005

POMS College of Service Operations Conference, Dec 2-3, 2004

EDITORIAL TEAM

Editor: **Rohit Verma** University of Utah, Phone: 801-585-5263. (rohit.verma@business.utah.edu).

Associate & Feature Editors

Sal Agnihotri, Binghamton University (agni@binghamton.edu): **Scheduling, After Sales Service, Product Support**

Humberto Cantu, Monterrey Tech, Mexico (hcantu@itesm.mx): **International Issues**

Lori Cook, DePaul University (lcook@depaul.edu): **POM Education**

Craig Froehle, University of Cincinnati (craig.froehle@uc.edu): **E-Operations**

Vidyaranya Gargeya, The University of North Carolina at Greensboro (vbgargey@uncg.edu): **POM Education**

Susan Meyer Goldstein, University of Minnesota (smeyer@csom.umn.edu): **Health Care Operations**

John Goodale, University of Oregon (jgoodale@LCBmail.uoregon.edu): **Service Operations**

Ken Klassen, Brock University (kklassen@brocku.ca): **Service Operations**

John Kamauff, Loyola College (jkamauff@loyola.edu): **POM Practice**

Lalit Johri, Asian Institute of Technology (lmjohri@ait.ac.th): **Strategic Management/POM Interface**

Pranab Majumder, Duke University (majumder@duke.edu): **Environmental Operations**

Debashish Mallick, University of Minnesota (dmallick@csom.umn.edu): **Product Development**

Larry Menor, University of Western Ontario (lmenor@ivey.uwo.ca): **Operations Strategy**

Leslie Morgan, University of Utah (mgtlm@business.utah.edu): **Operations/Marketing Interface**

Gerhard Plaschka, DePaul University (gplaschka@allgrp.com): **Customer Value Management**

Taylor Randall, University of Utah (acttr@business.utah.edu): **POM/Accounting Interface**

Rachna Shah, University of Minnesota (rshah@csom.umn.edu): **Lean Manufacturing**

Rajiv Srivastava, Indian Institute of Management (rks@iiml.ac.in): **International Issues**

Srinivas Talluri, Michigan State University (talluri@msu.edu): **Supply Chain Management**

Don Wardell, University of Utah (mgtdgw@business.utah.edu): **Quality Management and Six Sigma**

Jacob Wijngaard, University of Groningen (J.Wijngaard@bdk.rug.nl): **POM Problems, Models, Systems, People**

Kum Khiong Yang, Singapore Management University (kkyang@smu.edu.sg): **International Issues**

Ashley Livingston, University of Utah (abl9@utah.edu): **Assistant Editor**

*POMS Chronicle is published by the
Production and Operations Management Society to serve as a
medium of communication and to provide a forum for dialogue
among its members.*

Dr. Sushil K. Gupta,
Executive Director-POMS
Professor

Decision Sciences & Information Systems
College of Business Administration
Florida International University
RB250

11200 Southwest, 8th Street
Miami, FL 33199, USA
Phone: 305-348-1413
Fax: 305-348-6890
Email: poms@fiu.edu
Web: www.poms.org

POMS Membership Information is available at:

POMS Website: www.poms.org
or
Professor Chelliah Sriskandarajah
Associate Executive Director
poms@utdallas.edu

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news & announcements
and other information of
interest to POMS members
to the Editor Rohit Verma

*Electronic submissions are
strongly encouraged*

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FROM THE EDITOR

As a new editor for a new news/discussion magazine I keep wondering what folks must truly think of **POMS Chronicle**. Yes, people say nice and polite things when they meet me, but do they really read the magazine? Assuming they do read it, is the information presented relevant and interesting?

Professor Skinner's "letter to the editor" in the previous issue; follow-up articles based on Professor Thompson's thought-provoking article (Vol 10, No 2); many feedback emails; and rising number of submission of news items and feature articles make me think that that the first year of "re-birth" of POMS Chronicle has been successful! Thanks everyone for making this happen.

Under the able leadership of President Gabriel Bitran, we are looking forward to introducing many new features within the **POMS Chronicle**. For example, within the current and upcoming issues you will see contributions from international scholars; discussion articles about operations management; book reviews; practitioners' related articles and much more, in addition to news about POMS.

As always, I look forward to your letters, comments, and feedback. POMS Chronicle can become an effective news/discussion magazine only if members of the community continue to come forward and are willing to share their views/opinions/optimism and concerns. So please do contact any of us in the POMS Chronicle editorial board (listed on page 2). Looking forward to hearing from you soon ...

Until next time!

Rohit Verma

Editor, POMS Chronicle

Associate Professor and Thyne Robson Fellow

David Eccles School of Business

University of Utah

Phone: 801-585-5263

Fax: 801-581-7214

Email: rohit.verma@business.utah.edu

President's Message ... from page 1

Traditionally, MBA and Industrial Engineering programs have not emphasized sufficiently the RM methodology on how to deploy resources (product and service design, quantity, type, time frame, location, pricing...) to cope with the uncertainty and the management of demand and supply. This trend is being reversed by the recent publications of excellent books targeted to these courses. In practice, it is often not easy to identify the tradeoffs involved and managers are tempted to use averages. I am aware that data does not always exist and that parameters are sometimes difficult to estimate. My objective, in this short note, is not to focus on mathematical models but, rather, on the concepts. The lack of reaching out to the community of practitioners is unfortunate because we are not materializing the contributions that we can jointly achieve. In most instances, there is no alternative to long-term impact on society than practitioners, academicians, and users of products and services working together.

I strongly believe that RM can be to the OM community what Portfolio Theory has been for our colleagues in finance. They have created a new paradigm for financial investments, and we can do the same for resources deployment and for products and services design. Recall that time, channel of purchase etc, are part of product design. This may be obvious to the membership of POMS but it is certainly not for many consumers and managers. Customers outraged for paying more than others for an identical airplane seat, and statements like "everybody should be treated equally", instead of "everybody should be treated with respect", illustrate my point.

The understanding and management of uncertainty created opportunities in finance and can do the same for RM. The academic community may have missed the opportunity to lead the field in the JIT revolution; we cannot afford not to lead the service revolution going forward. RM and SCM are two of our major opportunities to work closely with our colleagues in industry to create social value. This is the purpose of our work, and POMS is the place to make it happen! I look forward to working with all of you to materialize POMS potential.

Gabriel Bitran

MORE REFLECTIONS ON OPERATIONS MANAGEMENT

**Ivor P. Morgan**

Associate Professor

Babson College

Email: morgan@babson.edu

**Jay Rao**

Associate Professor

Babson College

Email: raoj@babson.edu

We endorse the theme of Gary Thompson's article "Reflections on Operations Management: Research in Business Schools" (POMS Chronicle, 4th Quarter 2003, Vol. 10, No. 2). Gary Thompson speaks of the need to connect business school research with industry, and to the discomfort consulting activities create in some of our members.

But to implement the recommendations made by Gary Thompson, further changes will be needed within business schools. And these require far more than an acceptance by individual faculty members. Somehow senior faculty, journal editors, deans and promotion committees must be aligned to accept these ideas. There is no doubt that senior faculty must lead the way. And editors should take a firm stand on paper acceptances—emphasizing practical applications with real world data.

Building on Gary Thompson's Ideas

Faculty should be given an incentive to teach executives. This is a true test of relevance. And industrial executives should be invited regularly to listen and appraise the faculty's research, a force that will strengthen the link between research and practice.

To encourage business school/industry connections, schools should reduce the internal funding of research, such as summer research funds. We should encourage direct requests to industry; engineering schools have done this quite well. Furthermore, chairs, deans and other administrators with budget power should focus funding on major conferences rather than the myriad of 2nd and 3rd level conferences around the world. This would enhance competition and drive lower quality conferences and their associations out of business. In short our entire community should focus on quality and not quantity in everything we do—papers, presentations, conferences, journals.

We are good at writing papers of interest to ourselves. However, the finance faculties around the country have found a way to make their work really applied, and their top journals cater to this. They command the highest salaries in business schools while POMS salaries are amongst the lowest. This is in part because the "real world" often sees our field as spinning through a "cycle of irrelevance": epsilon tweaking research → little practical contribution → no industry understanding → less demand for our courses/electives → lower salaries.

Let us learn a little from our sports teams. There is always a premium for scarcity. Baseball teams play 162 games and hockey and basketball play a ton (who can keep track). However, football has a 16-game regular

season schedule and each one counts. So, it is not a surprise that NFL has the undivided attention of the country and the average value of an NFL franchise at \$625 million is more than double that of a MLB franchise (\$300 million). The average NBA franchise is valued at \$250 million. Nielsen's regular-season average network rating of NFL, MLB and NBA is correlated to this as well.

We need to redefine our vision, our boundaries and our critical skills.

Semantics, Vision & the External World

Ours is a profession with poorly understood boundaries. This is a problem not only for our research but for the recognition of the POMS field. The two of us are frequently asked "What do you teach?" We cannot answer "POM," as this means little to most people. So we fall back on something like: "Marketing handles demand management and we cover the supply side. And this means manufacturing, supply chain management, logistics and...." Some of these may fit manufacturing reasonably well, but are a poor fit for services.

Our need to be current has led us to adopt terms because they are in vogue. Supply chain management has become a major area. But a "supply chain" creates an image of a linear model—with simple connections. Supply systems are usually networks and not chains—but this touch of reality has been lost.

One unfortunate consequence of these semantic problems is that hot items are commandeered by others. After many years of teaching purchasing and logistics management—now "morphed" into supply chain management—it is distressing to see firms that have adopted our lessons—such as Walmart—as central to business policy courses not OM. And now that ERP covers the enterprise, it has often left the realm of OM for business policy or information systems. We in turn just get defensive.

Turf battles will always exist. And the dynamics of industry will force a shift in boundaries and definitions over time. Thus POM will have to contend with encroachment from Services Marketing, Business Policy, Strategic Costing and Human Resource Management. The problem seems to be that when the subject becomes important, we lose it. We tend to look at problems rather narrowly, generally avoiding broad complex problems because we are better at solving tightly defined ones. There is of course nothing wrong with solving tightly defined problems but if that is all we can do, we are in danger of being seen as only borderline relevant. Yet our field of practice is the whole operating dimension, and is the umbrella for many of these competing areas.

Our argument about semantics would be incomplete without a hit at "Services." Service operations and their markets are generally inextricably entwined. Many restaurant chains do not have marketing depts. until they are of considerable size, for example. Yet they perform marketing functions from their conception. Thus "Service Operations" is a term that forces us into narrowly defined problem areas. Semantics do count. The two of us have chosen to call our present offerings in this area "Service Strategy & Innovation."

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This removes the artificial nature of functional boundaries from our subject matter. The title serves us well within our business school but would not were we to use it for executives because the term "services" is so broad as to have little meaning.

We suppose the term comes from its use in economics. But its limitations are clear when we consider this group of enterprises is now around 80% of the US economy. The coverage is so extensive that it requires further definition. A firm creating insurance policies, for example, has little in common with one running an airline.

It is perhaps here that we come full circle back to the article of Gary Thompson. He defines a clear target market by encouraging industry interaction. And he recommends steps to focus on that target. We endorse that process but feel that much more is needed to describe our profession. Interactions between enterprises are becoming more complex and in the words of Gary Thompson "sub-optimal solutions" are likely to be increasingly the only ones to realistic problems.

The POM field does have some clearly defined areas. Manufacturing is one such area. But manufacturing as such represents only 11 percent of US employment. We live in a dynamic society and redefinition is a constant task even for a body of knowledge that has been once well defined. POM specialists inherited the mantles of "scientific management" and "operations research" among others. However we are in a world of management and not one of science. This means practice and not just neat theory.

The challenges are great but these are exciting times. The vision adjustment we see necessary is not simply one for research but one that must grapple with the nature of our field. The vision must be inclusive, but our present semantics have meaning only to those who already understand them. This is reminiscent of the frequently heard criticism of Boston road signs. However, a profession's title should at the very least convey meaning to those outside of it. We have not arrived at that point.

Perhaps a start would be to look towards Gary Thompson's school—the School of Hotel Administration at Cornell. The school has a very clearly defined audience and hence an excellent alignment of research and teaching; the title of the school leaves little doubt about its identity. Some of our present ambiguity would be removed by focusing on one industry—healthcare, financial services, or people transportation, for example. We already divide manufacturing into compartments like high-tech, low-tech, or smoke stack. So when people ask us what we research or teach, we may end up with "innovation in the hospitalities industry" or "technology implementation in the financial services industry." Groups or individuals wanting to be broader—like the two of us—could try "technology and innovation," or "strategic alignment and execution." We do not have a clear answer to our dilemma. The challenge is to be succinct, easily understood both in schools of business and in our external areas of interest, and yet to link to a single professional area.

Sixteenth Annual Conference of POMS: April 29 - May 2, 2005 CHICAGO

Please mark your calendars for the POM-2005, the sixteenth annual conference of the Production and Operations Management Society. The dates for the conference are Friday, April 29 through Monday, May 2, 2005, and the location is Chicago.

The theme for the conference is **OM Frontiers: Winds of Changes**. The conference will host speakers from both industry and academia. As in the past, a variety of POM topics will be addressed with focus on understanding practices of the companies that are on the frontier of providing value to the customer in the changing environment.

Arrangements will be made for factory tours and visits to interesting places. More details of the conference and a call for papers will be coming to you in early fall.

Conference Chair

Suresh Chand

Professor, Krannert School of Management
Purdue University
West Lafayette, IN, U.S.A.
suresh@mgmt.purdue.edu

Program Chair

Asoo J. Vakharia

Beall Professor of Supply Chain Management & Chair
Department of Decision and Information Sciences
Warrington College of Business Administration
University of Florida, Gainesville, FL 32611
asoov@ufl.edu
(352) 392-8571

REFLECTIONS ON THE OPPORTUNITIES FOR RESEARCH IN SUPPLY CHAIN MANAGEMENT – A UK PERSPECTIVE

'For many years science has spoken to society... now it is the turn for society to speak to science in a reliable manner' (Nowotny et al, 2001)



Janet Godsell

Research Fellow

School of Management

Cranfield University

Email:janet.godsell@cranfield.ac.uk

I was asked to write this article at the 2nd World Conference on POM in Cancun as a result of a vocal expression of my views at the Supply Chain College meeting. I hope that this article will generate debate and play a small part in helping to turn the Supply Chain College into a mechanism for turning good supply chain theory into practice. This is something that I, like many others, feel very passionately about. In many respects this article echoes the views of Gary M. Thompson in the 4th Quarter 2003 edition of the Chronicle. Like Gary I am also employed in a school that places a high degree of importance on its relevance to industry. Whilst we have always prided ourselves on this relevance, it is interesting to note that higher education policy makers within the UK recognise its strategic importance too. Richard Lambert during a de-briefing session on the Lambert Review of Business-University Collaboration described Cranfield as: *'Exactly the kind of institution that is a model of what I am proposing'*.

Why me?

Having only been in research for 3.5 years, and therefore a 'young researcher', I feel that I am in a privileged position to make some fresh observations as my ideas have yet to be constrained by established norms. Several of these ideas are grounded in practical experience through my previous career where I came into contact with the challenges of supply chain management first hand as a chartered engineer. I feel quite lucky as I have had the opportunity to work in a wide range of industries including chemicals, oil, pharmaceuticals and domestic appliances in a wide range of roles spanning the breadth of the supply chain, in both large multinational enterprises (MNEs) and a relatively small entrepreneurial company. At different times in my career I have been on opposite sides of the academia-practitioner divide and feel quite strongly that my academic career will have been without purpose unless I make an impact in reducing these artificial and limiting divides.

Supply Chain Management: A Design Science

Perhaps driven by a desire to justify their more qualitative approaches, European academics have embarked on a journey of trying to understand what management research is actually about. With my roots in

engineering it is perhaps a natural progression for me to consider that 'management' in many senses is analogous to engineering in as much as it is an 'applied' science taking the output of more formal social sciences and applying them to the 'messy' real world. Van Aken of Eindhoven University develops this view further and terms 'management research' as a 'design science'.

The objective of design science is three-fold: Firstly to define how things should be, secondly to test the theory in practice (i.e. field tested) and thirdly to test the theory in adjacent fields (i.e. grounded). As advocated by Prof. David Tranfield, Director of Research at Cranfield School of Management – this has major implications on the way in which we stack management knowledge. Historically we have stacked knowledge by discipline (e.g. engineering) or by function (e.g. operations management), but now we need to think about cutting across these traditional silos in a way that is relevant to business: In other words in a way that is naturally used by managers, for instance by sector or theme. Supply chain management (SCM) is a key theme and to research SCM effectively academics need to embrace the principles of 'design science'. This perhaps leads to the blurring of lines between academia and consultancy but in reality the boundaries could not be clearer. It is the role of academics in SCM to conduct 'strategic' research that provides the conceptual designs, the archetypal forms and roadmaps that guide practitioners. It is the role of consultants and industry to craft these generic guidelines into specific applications.

This view was echoed and developed by a senior SC professional I interviewed at Philips. He had a vision that future SC professionals would not have careers that were incarcerated in industry, academia or consultancy but that flexible networks would be set up between universities, companies and consultancies that facilitate career paths that could include roles in any part of the network. This has obvious benefits for ensuring that good SC theory is turned into good practice and is the ultimate form of academic and practitioner partnership. Whilst it is perhaps the utopia that we may all ultimately strive to achieve such a model is not likely to be implemented overnight and there are a number of ways in which academic-practitioner alliances can be developed without going to this extreme.

Research Clubs

For a number of years Cranfield has been active in running practitioner research clubs. The flagship research club in the supply chain management field is the Agile Supply Chain Research Club (ASCRC) which was

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founded by Prof. Alan Harrison in 1999. Practioners pay in the region of \$13,500/annum to be a member of the club. Club membership is limited to 10-12 companies and new members are ratified by existing members if there is felt that a conflict of interest may arise. For this they guide the research agenda of the club; attend four practioner roundtables per annum; have open access to Cranfield's Supply Chain Knowledge Centre and have priority access to interns following Cranfield's Masters programme in Logistics and Supply Chain Management. The research club subscriptions fund research directly and where appropriate they are leveraged against other research funding. Cranfield's expertise in operations management has been recognised by the relevant grant making bodies and it has been awarded Innovative Manufacturing Research Centre (IMRC) status. It is 1 of 18 centres of this type in the UK. This helps to provide continuity of funding as cash is allocated to the Cranfield IMRC over an extended time period and projects apply internally to the IMRC for funding rather than to the external government body. Typically research projects have cash funding from industry that covers at least 30% of the total project cost. Research club subscriptions are an ideal way of providing this funding, though it does require individual club members to commit their support to specific projects in writing. In addition industrial partners are expected to make a contribution in kind, usually by making resource available to partake in the research activities.

A Virtuous Circle

I began my academic career working on an IMRC funded project looking at Customer Responsive Supply Chain Strategy. This project was part funded by the ASCRC and six of the members became focal firms for our empirical investigation of their supply chains. The output of this research is a roadmap that has been developed into a three day executive development programme. This programme has run both as an open programme and in-company programme, though due to the boundary spanning nature of SCM it works best as an in-company programme. The net result is that two organisations have been so impressed with the approach that they have agreed to become members of the ASCRC and provide industrial funding for a follow-on project based on an action research methodology. These companies are willing to work with Cranfield and a consultancy partner (another project co-sponsor), to work towards the implementation of a customer responsive supply chain strategy within their supply chains. Hence at a project level an academic-industry-consultancy network has been formed which will get to the heart of the actionable research debate. Furthermore we are now in a position where research generates executive development which attracts new industrial partners which generates more research and hence a virtuous circle is formed.

Global Research Club Networks

Having spent some time studying and working in Japan I have been fortunate to be involved with our School's relationship with Kobe Graduate School of Business. Kobe is just one of three Japanese business schools that have been awarded Centre of Excellence status, and Kobe's specialist area is Supply Chain Management. We have a workshop planned for later this year where we plan to discuss opportunities for collaborative research and executive development, firmly rooted in practioner based action research. Our vision is to extend this network to include a centre in North America so that it will provide a truly global research network reaching academics, practioners and consultants alike.

Implications for the Supply Chain College

So what does all this mean for the SC College? Well firstly I think it provides the opportunity for the College to help facilitate the development of Global Research Club Networks that are focused around particular sectors or themes. This in turn could be linked to the bi-annual conference which could provide the opportunity for the global research club partners (from academia, industry and consultancy) to meet face to face with the primary aims of:

- Using the rich breadth of knowledge available to craft a research agenda for the following two years
- Provide an opportunity to share learning from previous collaborative projects and in particular to consider the cross-cultural/ cross-sector learning

A key enabler to this process is for the POMS College of SCM to extend their board to include representatives initially from academia in the key regions to which the global research club network would like to extend, but possibly with input from practioners and consultants as well. SCM is a truly exciting environment in which to conduct research and make a real difference to practice. I am up for the challenge, are you?

POMS College of Supply Chain Management

Board Members

- Ananth Raman, Harvard
- Marshall Fisher, Wharton
- K.K. Sinha, Minnesota
- Karen Donohue, Minnesota
- Jay Swaminathan, UNC Chapel Hill
- Eric Johnson, Dartmouth College

WHAT'S BEYOND LEAN?

AN OPPORTUNITY FOR THE IE/OR/OM PROFESSIONS!

**Rajan Suri**

Director, Center for Quick Response Manufacturing
University of Wisconsin-Madison
Email: suri@engr.wisc.edu

Every couple of years there is an event that sparks a lot of discussion about how to make our efforts more relevant to practice. This happened again recently with a flurry of emails circulating on faculty networks with subjects such as “reexamining our fundamentals” and “identity crisis of our profession.” Of course I vicariously participated in the self-flagellation of our community, but I then felt compelled to make a stronger public statement, and so I am grateful for the opportunity to do it through this article.

Given the considerable overlap in the OM-related topics covered by the Industrial Engineering, Operations Research and Operations Management professions, I consider our community to include all these disciplines and will henceforth refer to us as the IE/OR/OM profession. It is definitely frustrating that many of the “buzzword” strategies of the last 20 years have been popularized from outside the IE/OR/OM profession, and even though these strategies use our methods and tools, our profession has not been recognized for them.

Instead, what happens is that when one of these buzzwords gets to be big, we all jump on the bandwagon and try to assimilate it into our profession (remember Reengineering and all the POMS conference presentations that followed?), and try to make it look like we are the home community for people who want to learn how to implement this buzzword. This of course is okay, since we should be the home community for many of these. The problem however, is that we are always driving by looking in the rear-view mirror and grabbing at opportunities after they have past us. Why aren't we looking ahead? It's about to happen again, and I find it more than intellectually frustrating – I have to deal with this issue whenever I work with any manufacturing enterprise these days.

What's happened is that Lean Manufacturing is really big right now. And it deserves to be, because it has a lot to offer, it has been nicely explained through several easy to read books and seminars, and it has helped a lot of companies improve their productivity and quality. And of course, we have all jumped on board, trying to catch up with the consultants and trainers, teaching it to our students, and trying to convince managers that we are the people who can best help

them implement Lean. All of which is fine, but I ask you, shouldn't we avoid the same mistake as in the past and spend some time asking: “**What's Beyond Lean?**” I submit that the answer is: A big opportunity for the IE/OR/OM professions!

Allow me to state my case. [Disclaimer: this is intended as my personal opinion, and I do not claim to be unbiased! I do however have a basis of extensive interactions with industry.] Okay with that said, here's my case.

The key approach used in implementing Lean Manufacturing is to create flow. To do this one has to: (1) set task times, (2) create a level schedule, and (3) use kanbans to control production steps. From an IE/OR/OM point of view, what one is doing is eliminating variability in the system to reduce flow time. This may be a good solution in many cases. The question we should ask though is: *Is this the right solution in all cases?*

An IE/OR/OM analogy might help. We teach our students to use the right tools for solving the right problems. Linear Programming (LP) is a very powerful tool. Yet the world's best LP program would not be the right tool to apply if we wanted to look at waiting times for customers at a bank – a simple queuing model might be more effective than the most powerful LP! Good analysts understand the differences between deterministic and stochastic models, linear and nonlinear models, etc.

If you analyze the three elements I listed for Lean above, you see that the Lean approach is based on a simple deterministic model, with only a minor accommodation for small amounts of variability. In our work with dozens of companies we have found that this model has serious deficiencies when you apply it to companies that have any of these three characteristics: (a) high variability in demand (task time breaks down); and/or (b) a large variety of low volume products (task time breaks down, plus too many kanbans in the system); and/or (c) custom-engineered products (you can't have a kanban container of something that isn't designed yet).

To further understand the business side of this issue, an insight into variability may help. I will define two types of variability. The first I call *dysfunctional variability*, which is caused by errors, ineffective systems and poor organization. Examples of dysfunctional variability are: rework; changing priorities and due dates; and lumpy demand due to poor interfaces between sales and customers. The second type of variability I call *strategic variability*, which an organization uses to maintain its competitive edge in the market.

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Examples of strategic variability are: the ability to cope with unexpected changes in demand without degradation of service; offering a large number of options to customers; or even offering to custom-engineer products for individual customers.

Lean works by attempting to eliminate **all** variability in the manufacturing system. This is good as far as eliminating dysfunctional variability, since it leads you to work on the root causes and eliminate them. However, you may not want to eliminate strategic variability, particularly if it is the basis of your competitive advantage.

If you agree with the above statements, then the opportunity for the IE/OR/OM professions is: How can we design effective organizational structures, management systems, and support tools, so that we can cope with this strategic variability and serve those customer markets effectively?

I believe that the IE/OR/OM community is well equipped to address this question. We understand organizational structures including the human aspects of them, we understand deterministic and stochastic models and the whole issue of variability, we have much experience in developing decision support tools, and so on.

In fact, we have seen many contributions from people in the IE/OR/OM community who have addressed this issue. While there have been many papers, and research-oriented books, I will give just two examples, because they are books that have made it out of academia and into the hands of many industry readers as well (forgive my bias - I'm not claiming to be unbiased here!):

1. Hopp and Spearman's book on *Factory Physics* (Irwin 1996; new edition 2001) introduced a formal and yet simple way for managers to understand and deal with variability without having to be experts in stochastic processes. In their book and in many keynote speeches they have shown managers the dangers of using simplistic deterministic models, and the advantages of understanding and coping with variability.

2. My book on *Quick Response Manufacturing* (Productivity Press, 1998) contains extensive discussions on situations where the simple Lean/Kanban approaches break down, and throughout the book I discuss organizational structures, systems, and tools to help companies cope with strategic variability. Through our Center at the UW we have helped dozens of companies implement these strategies to gain competitive advantage.

There is still a lot of room for others in the IE/OR/OM community to understand this opportunity and make a contribution

that will have an impact on industry! Consider these three closing arguments.

(I) Almost every manufacturing enterprise is adopting Lean (or trying to). So where is the competitive advantage if everyone is doing it? It becomes a prerequisite (like Quality is today) but no longer a leg up.

(II) Lean Manufacturing is based on the Toyota Production System model, which was essentially perfected by Toyota more than 30 years ago. Are we going to leapfrog the competition by adopting 30-year-old approaches?

(III) Today's CAD/CAM technology has given companies the ability to custom-engineer and then manufacture products for individual clients without incurring the high additional costs that such customization would have required two decades ago. Along with this has come the power of the internet, which allows customers to view many different options and select from them, sometimes allowing choices that may require engineering. All these developments mean that there will be increasing demand for a large variety of low-volume products and custom-engineered products.

Thus it is my opinion that leading-edge companies will have to quickly move beyond the Lean approach in the coming years in order to retain competitive advantage. There are many open questions on how to best do this; our community with its combined expertise is uniquely positioned to take the lead and show industry the way!

First Conference of the POMS College of Service Operations

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CHANNEL DESIGN FOR SERVICES: AN APPLICATION TO THE PROPERTY AND CASUALTY INSURANCE INDUSTRY



Avi Giloni
Assistant Professor
Sy Syms School of Business
Yeshiva University
Email: agiloni@ymail.yu.edu



Sridhar Seshadri
Associate Professor
Operations Management Department
Leonard N. Stern School of Business
New York University
Email: sseshadr@stern.nyu.edu

Pasumarti V. Kamesam

IBM T J Watson Research Center
pvk@us.ibm.com

Giloni, Seshadri, Kamesam [2003] (from hereon in, GSK) discuss the service system design problem for insurance firms that serve the property/casualty insurance (P/C) market. This problem is of great importance because the distribution of insurance products is central to an insurance firm's success within a rapidly changing property/casualty insurance market. Here, we outline some important implications for managers of service and channel systems for firms within the P/C insurance market and other service industries.

GSK define the Integrated Channel Design problem to comprise of finding answers to the following set of questions: (i) which products and services should be offered, (ii) which subset(s) of the firm's products and services should be made available to different customer segments, (iii) which channels should perform the necessary service functions for each of the various customer segments, (iv) how to optimally allocate resources to the various channels, (v) how to achieve operational efficiency and effectiveness, and (vi) how to use information technologies most effectively for performing the service operations. They develop a normative model to address this problem.

GSK's model is structured so that it can address the needs of firms that pursue different strategies. For example, low cost, differentiation, and focusing on a niche market are examples of quite different strategies that are followed in this market. GSK embrace the view of Donnelly and Guitinan [1986] that the difficulties are less with the differences between products and services and more with failing to clearly distinguish between the production and the distribution of services. Thus even though two firms in this industry use different strategies for reaching customers and have different products and performance standards, their distribution channels are required to perform a similar spectrum of service functions. It is by identifying and classifying these functions that a common approach to channel design can be crafted.

The integrated service system design problem can be divided into three parts. The first task, as identified above, is to create segments

that have similar service requirements. GSK provide a list of channel functions that can be used to describe these service requirements, which in turn form a basis for segmenting the market. The second task is to design the distribution system itself. GSK develop such a model. Future research is required to determine how a firm should operationalize the strategy, i.e., deliver its services with various service levels using multiple channels while creating the least channel conflict. The main results from the GSK model are summarized below.

- GSK extend and enhance the definition of channel functions (originally meant for industrial products, see Rangan [1987]) to insurance and other service industries.
- Using their model, GSK show analytically that there exist at least two customer segments for P/C insurance products.
- GSK show that the existence of more than one customer segment is one of the major reasons why insurance products are sold direct to customers as well as via agents.
- GSK show that the existence of multiple customer segments along with the existence of multiple service channels requires the proper segmentation of a firm's customers into segments that are correctly matched to the appropriate service channels. This reduces channel conflict and it helps a firm signal better price to its price conscious customers and better service to its customers who prefer higher service levels and are willing to pay a higher price. This aspect is discussed in greater detail below.
- GSK demonstrate that the segmentation of the market can be done by parsimonious use of demographic variables that serve as proxy for different levels of preferences towards the channel functions.

GSK also research several topics that are relevant to the channel design problem. Four important components of the design problem are: Managing channel conflict, focusing service strategy, the use of the Internet channel, and market segmentation.

Channel Conflict It is crucial that a firm utilize a service design system that is appropriate for reaching its targeted market segment(s). Small firms can often successfully utilize only the channel (s) that is/are most appropriate for the market segment(s) the firm is attempting to reach.

If a firm wishes to reach only one customer segment, say those customers that are willing to pay for higher quality of service, it may be appropriate to use independent agents as the premier channel and use other channels, e.g., the Internet only for information retrieval and/or claims processing. Therefore, the dangers of channel

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conflict are reduced by utilizing only one genre of channel for those functions when conflict between internal and external channels is detrimental to the firm. Any conflict will take place external to the firm. This not only will not include extra costs, but also will maintain the level of service provided by the independent agents at a competitive level. Similarly, if a firm wishes to reach price conscious customers, it could utilize various internal channels (and completely eliminate external channels such as independent agents), since conflict can be controlled internally through managerial effort to encourage synergy between the various channels (see, e.g., Friedman and Furey [1999]). On the other hand, if a multiple channel system is utilized (which we believe is usually the case for large firms that wish to target different customer segments), then channel conflict can be reduced by varying the service package that each channel distributes. Such a strategy can be useful in more ways than one. By varying the service package (even slightly), customer segments that prefer higher service levels will more likely be attracted to those channels that provide higher service levels, are pricier, as well as cost the firm more. Similarly, customer segments that are more price conscious will be more likely to be attracted to channels that distribute similar services with lower prices and lower service levels (see e.g., Moriarty and Moran [1990]).

Focusing Strategy It is reasonable to expect that firms that attempt to reach multiple market segments have yet another issue to deal with: They find it difficult to focus their strategies. In other words, such firms must not only provide the extra service to a segment of its customers but also must maintain a reputation as a provider of high quality service. Achieving these dual objectives is more of a problem for firms that try to sell in (both) multiple market segments since it is already known that they provide no frills service to other customers for a (significantly) lower price. Therefore, we hypothesize that signaling better quality or better price, and preventing customers that prefer personalized service from buying the low cost product is a much more severe problem for insurers than it is for a seller of industrial products.

The Internet Channel The Internet has further complicated the service design problem for insurance and services. GSK apply the service channel strategies (SCS)" approach (Apte and Vepsalainen [1993]) to P/C insurance by determining which service functions are inherently more transaction-based, are similar to simple service contracts, and thus require low human intermediation. GSK describe that the Internet is better suited as a distribution channel for those service operations that require low levels of customization. Although (some) service functions can be performed via the Internet at a lower expense, the question for modern day insurance and service firms is whether or not this will increase their probability (see Garven [2002]). Furthermore, firms need to manage channel conflict due to the Internet, specifically between agents and the Internet (see Eastman, et al [2002]).

Market Segmentation Besides utilizing the proper service distribution design systems for different targeted market segments, it is clearly necessary that the firm correctly segments the market using customer preferences.

In fact, GSK show that on a macro level just a few demographic variables (that serve as proxy for different levels of preferences towards the channel functions) can describe the variation in the market share of direct writers. This is a starting point for future work on creating more specific models. For example, in order to create a firm specific and/or line specific model, one would require demographic variable data on a much finer granularity, for example, at the level of towns or counties. In such a case, one would also want to include data on variables that represent the service functions that GSK have identified for the P/C insurance industry. Similarly, competitive activities within the region in question will need to be input to the model. In conclusion, it is important to note that it is no longer a 0/1 choice whether a direct or an indirect channel is used by firms to distribute their insurance products. Firms must determine which functions their customers prefer to have performed through which channels. The classification of channel functions that was proposed in the context of physical goods appears to carry over nicely to the channel functions for the distribution insurance services. It will be interesting to see to what extent similar conclusions can be drawn with regard to the design of service systems, other than insurance.

For Additional Details: please contact the authors.

Winners of Skinner Awards, 2004

Early Career Research Accomplishments Award

Gilvan C. Souza, Assistant Professor, The Robert H. Smith School of Business, University of Maryland, and
Ozalp Ozer, Assistant Professor, Department of Management Science and Engineering, Stanford University.

Teaching Innovations Award

First Place: **Samuel C. Wood** and **Sunil Kumar**, for "LittleField Technologies" exercise.

Second Place: **Sharon A. Johnson** and **Amy Z. Zeng** for "Integrating Discovery-Based Laboratories into an Undergraduate Introductory Operations Management Course".

Best Paper Award

First Place (tie):
"Coordination of Supply Chains with Risk-Averse Agents" by **Xianghua Gan**, **Suresh Sethi**, and **Houmin Yan**. Paper is scheduled to appear in *Production and Operations Management*, vol. 13, no. 1, Spring 2004

"An Analysis of Selection Criteria for Grocery Home Delivery and Effects of Operational Execution of Repeat Purchasing" by **Ken Boyer** and **Markham T. Frohlich**.

Second Place:

"The Effects of Just-in-Time/Lean Production Practices on Worker Job Stress" by **Jannis Angelis**, **Robert Conti**, **Cary Cooper**, **Brian Faragher**, and **Collin Gill**

AN INDEX FOR MEASURING THE DESIGN, TIME, COST TRADE-OFFS IN NEW PRODUCT DEVELOPMENT PROJECTS



Wei-yu Tsai
 Assistant Professor
 David Eccles School of Business
 University of Utah
 Email: mgwtw@business.utah.edu



Ted Klasterin
 Burlington Northern/Burlington Resources Professor of
 Operations Management
 University of Washington
 Email: tedk@u.washington.edu

When dealing with new product development projects, many project managers have a saying: “Good, fast, and cheap – pick two!” This saying reflects the trade-offs that managers must make in a new product development process among the design quality and performance of a product, time-to-market, and the product cost (the so called project triplets). Given today’s business environment with diverse customer preferences, short product life cycles, and rapidly changing technologies, it has become critically important for managers to fully understand these trade-offs in order to maximize the likelihood of a successful new product introduction.

These trade-offs are further complicated when we consider a dynamic environment with multiple firms that are developing similar products. In this case, decisions made by one firm may influence the decisions made by the other firms. This situation is common today, especially in the computer, automobile, medical instrument, consumer electronic, and aircraft industries where patents cannot be used to control entry due to rapidly changing technologies or technologies with abundant alternatives.

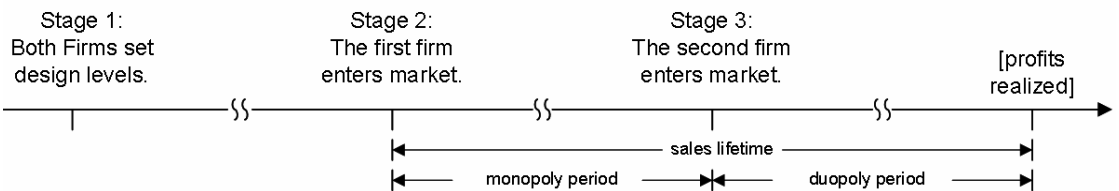
The costs involved in these trade-offs can be significant. For example, Clark (1989) estimated that delaying the introduction of a new \$10,000 car could cost an automobile firm as much as \$1M per day in lost profits. Hendricks and Singhal (1997) showed that delaying the introduction of a new product imposes, on average, a penalty of approximately \$120M on high-tech firms’ market value. On the other hand, Microsoft delayed the launch of its Xbox for more than a year after the debut of Sony’s PlayStation 2 in order to design a higher quality product. As a result, Microsoft sold 1.5 million Xbox consoles during the first six weeks of the product launch, topping Sony’s previous record of 700,000 units.

Analyzing the Trade-offs Among Project Triplets

In our recent paper (Klasterin and Tsai 2004), we develop a game-theoretic model to represent a new product introduction process. Specifically, we consider the case when two profit-maximizing firms enter a new market with a competing product that has a finite (and known) sales lifetime (Ulrich and Eppinger (2000) define “sales lifetime” as the duration of the product life cycle). Both firms make design decisions simultaneously without information about the other firm’s decisions. The order of market entry is a function of the firms’ product design levels and design capabilities. The first firm that enters the market sets a price for its product and enjoys a monopoly situation until the second firm enters the market. When the second firm enters the market, both firms simultaneously set (or reset) their product prices (which we assume are fixed for the remainder of the product’s sales life).

Solving this multi-stage new product introduction game, we show that sub-game perfect Nash equilibria (design levels and prices) exist under certain conditions on product characteristics defined by customer preferences, development time, product cost, and sales lifetime. Furthermore, we show that these characteristics, reflecting the trade-offs among the project triplets, can be summarized by a single product-specific index that we denote by B.

New Product Introduction Timeline



Product index B

The product-specific index B is the critical parameter that a firm needs to estimate the product design levels and prices in a new product introduction game. In our paper, we show that the product index B is equal to the product of a maximum price/cost ratio times a difficulty index. The maximum price/cost ratio estimates the potential margin given the estimated product cost. The difficulty index is a relative

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relative measure of the time needed to develop a new product against its own industry clock-speed; i.e., it is a ratio of product development time over the sales lifetime. The definition of the product index B is: The value of the product index B can be estimated using marketing surveys, customer preference regressions, conjoint analysis, and accounting data. For example, according to the data provided in Ulrich

$$\text{Product Index B} = \frac{\text{Max. Price}}{\text{Cost}} \times \frac{\text{Development Time}}{\text{Sales Lifetime}}$$

and Eppinger (2000) and assuming that the maximum price that a customer is willing to pay is 1.5 times of the sales price, the product indices for Stanley screwdriver, VW New Beetle, Rollerblade In-Line skates, and HP DeskJet printer are approximately equal to 0.113, 1.56, 2.51, and 4.02 respectively, as indicated in the following table.

Development Efforts	Stanley Jobmaster Screwdriver	Volkswagen New Beetle	Rollerblade In-Line Skate	Hewlett-Packard DeskJet Printer
(1) Development Time (year)	1	3.5	2	1.5
(2) Sales Lifetime (year)	40	6	3	2
Difficulty Index = (1) / (2)	0.025	0.583	0.667	0.75
Sales Price	\$3	\$17,000	\$200	\$300
Max. Sales Price	\$4.5	\$25,500	\$300	\$450
Product Cost	\$1	\$9,550	\$80	\$84
Max. Price/Cost Ratio	4.5	2.67	3.75	5.36
Product Index B	0.113	1.56	2.51	4.02

Managerial Insights

Our model shows that the firm entering the market first earns a greater total profit than the second firm when the product index B is approximately greater than 4 (i.e., a pioneer firm makes a higher profit by introducing a lower design product when the product index B is greater than 4). When B is less than 4, a later-entrant strategy appears to be more profitable.

Our model also provides important insights on the strategy of time-based competition. We show that the strategy of time-based competition is the natural result of firms' improving development capability, reducing product cost, and increasing customer preference. The profitability of both firms is reduced as a result of decreasing the sales life alone when B is larger than 1.2. The first firm, however, can increase its profitability by designing a less complex product and entering the market sooner. In this case, the first mover earns greater profit per

time period than does the second firm, although each firm's profit is reduced. In other words, it is not wise for profit-maximizing firms to arbitrarily shorten product sales life for the sake of competition since all firms are worse off.

We also extend our model to study firms with asymmetric cost structures and design capabilities. For example, when one firm has a significantly higher development cost than the second firm, the high cost firm should enter the market first with a less complex product when the product index B is less than or equal to 4. On the other hand, when the development cost differences are relatively small, the lower cost firm should set a lower design level and enter the market first for products that have relatively larger values of B. When there is a significant difference in the speed of the design process, we show that the firm with the more efficient design process should enter the market first with a relatively simple product when B is large or a more complex product when B is small. When the design time difference is relatively small, the first product to the market will be a low design product regardless of which firm designs the product. As we note in the paper, the product index B has a smaller impact on product design when there is an asymmetric design process rather than an asymmetric cost structure.

Note: Please contact the authors for additional details.

IU CIBER International Case Writing Award 2004

The Indiana University Center for International Business Education and Research (IU CIBER) International Case Writing Award goes to Ralf Seifert of IMD, Switzerland. The award committee comprised of Vince Mabert and Mohan Tatikonda of Indiana University.

Roger W. Schmenner

Past President & POMS Fellow

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Kelley School of Business

Indiana University

PRIORITY PRICING TO MAXIMIZE PROFITS

**Wendell Gilland**

Assistant Professor

Kenan-Flagler Business School

University of North Carolina at Chapel Hill

Email: wendell_gilland@unc.edu

We all know the consequences of variability in customer demand and/or processing time. Somebody or something will have to wait. Unless the processing system has infinite capacity, either customers will wait for their goods or services to be delivered, or finished goods inventory will wait for demand to materialize. In most service environments and in the production of customized products, holding finished goods inventory is not an option. Customer delays are therefore a natural part of most processing systems.

Not all customers, however, have the same tolerance for delay. Even the same customer, in some instances, will have varying degrees of time sensitivity for different jobs that they request. A standard replenishment order may not require immediate attention, whereas the same customer facing a “lines down” situation may need an order delivered yesterday.

As the old adage goes, “time is money.” Customers’ sensitivity to delay is frequently measured by a delay penalty – a monetary cost incurred by the customer that is a function of the throughput time of their order. The longer a customer waits, the greater the delay penalty. Given these delay penalties, customers are often willing to pay a premium to receive priority processing, thereby reducing the throughput time of their job. At Timken Company, roller bearing customers are given the option of placing orders as “Bearing Express” orders. By doing so, they pay a 10% price premium, but their order is given higher priority throughout the manufacturing process, resulting in delivery lead times of three weeks, compared to six weeks for standard orders. Amazon.com offers their customers several delivery options, ranging from next day up to two weeks. Customers who choose the rapid delivery option are paying for the increased cost of Amazon.com’s delivery partner, as well as for the prioritization their order receives within Amazon.com’s distribution facility.

How should a service provider price high priority service to maximize profits? What effect will offering priority service have on the total delay experience of the customer base? How does the customer’s behavior affect the dynamics of the system? These are a few of the important research questions that can help managers effectively guide their businesses in an environment that is plagued by congestion and delay.

We model the service provider as a single station processing system with variability in the time required to serve each customer. The time between customer arrivals is assumed to be exponentially distributed,

capturing the variability present in many arrival patterns. Heterogeneity in the customer population is captured by different delay costs (per unit time) and we assume the total delay cost of each job increases linearly with throughput time. The decision to accept a customer is made exogenously to our model, so all customers are served and they pay a fixed price for their basic service. The service provider can offer one or more levels of priority service with a price premium associated with each priority level. Separate queues are maintained for each priority class and lower priority customers are only served when there are no higher priority customers in the system. The jobs with the highest delay cost receive the greatest benefit from priority service, so the range of customer delay costs can be subdivided into a region for each priority class. Given an arrival rate for each priority class, queuing theory allows one to calculate the expected throughput time for each job.

Customers who are considering priority service can act in one of two different ways: independently or collusively. An independent customer chooses the priority class of a job based entirely on the specifics of the job. If the price premium for priority service is less than the difference in expected delay cost between the job submitted as low priority and the job submitted as high priority, then the customer will pay the premium and have the job processed with high priority. Collusive customers, on the other hand, determine the submission rate of high priority jobs to minimize the total costs of price premiums and delays across all customers. In so doing, they specifically account for the externality cost that can accompany a high priority job (either by delaying low priority jobs that had been previously submitted or by delaying high priority jobs that will be submitted in the near future).

The incremental profits reaped by the service provider are determined by the premium price and the submission rate for priority service. By anticipating the customers’ response to any price, the service provider can identify a demand curve for priority processing, and select a price to maximize profits. In this fashion, the service provider’s optimal price premiums and the resulting arrival rates for each priority class can be determined for both independent and collusive customers. These results can be compared to the system’s performance when no prioritization is available, and when arrival rates to each priority class are selected to minimize the total delay costs experienced by the customer base as a whole.

With two priority classes (high and low), we find that the interaction of greedy (profit maximizing) service providers and selfish (independent) customers results in an arrival rate of high priority customers that minimizes the total delay cost experienced by all customers. When customers act collusively, the arrival rate of high priority customers falls below the rate that minimizes total delay

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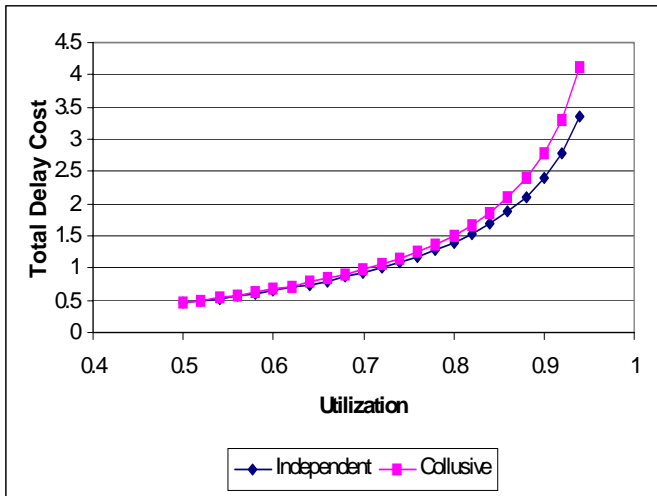


Figure 1: Total Delay Cost for Independent and Collusive Customers

costs, despite the fact that the service provider is charging less for priority service. As seen in Figure 1, the difference in total delay cost between customers acting collusively and independently increases as the total utilization of the processing resource increases.

Even with multiple (more than two) priority classes, the pricing menu selected by a profit maximizing service provider interacting with independent customers results in an arrival rate of customers into each priority class that minimizes the total delay cost across all customers. As the number of priority classes increases, the more precise customer segmentation leads to both higher profits for the service provider and lower delay costs for the customer base, as evidenced in Figure 2.

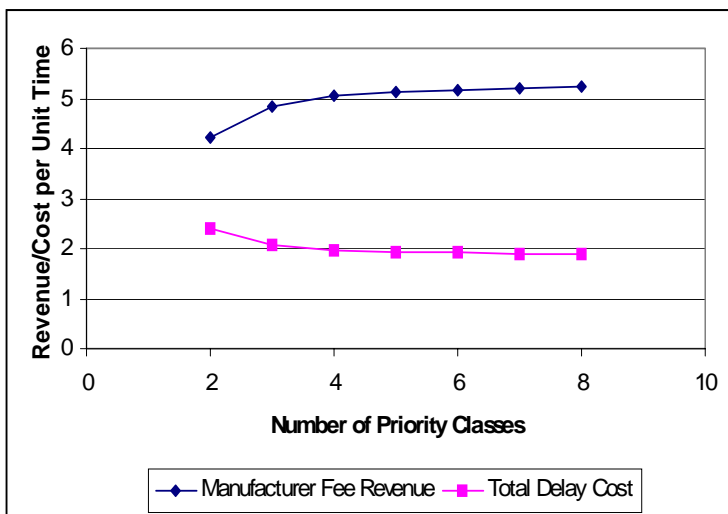


Figure 2: Impact of Number of Priority Classes on System Performance

A relatively small number of priority classes are able to extract the lion's share of the benefit that would accrue from perfect segmentation (i.e., always giving first priority to the job in the queue with the highest delay cost).

The results of this research have interesting implications for the organizational structure and reward system of vertically integrated firms. If the service provider and customers are two different business units of the same company, it is likely that each would be measured based on its own P&L statement. The customer organization would maximize its profits by acting collusively and reducing total costs (the sum of price premiums and delay costs).

As discussed previously, such action would be sub-optimal for the company as a whole since delay costs would be higher than necessary, and the price premiums are a transfer within the firm. A better solution would be to allow each customer to operate as an independent profit center.

Almost every customer claims they need their product or service delivered ASAP. By charging a premium price for priority service, customers can be induced to truthfully indicate the importance they place on speed. Giving priority to customers with high delay costs will not only increase the revenues of the service provider, but also reduce the total delay cost experienced by the customer base. Interestingly, the combination of a greedy service provider and selfish customers will lead to arrival rates for each priority class that minimize the total delay cost across all customers.

POM Journal News

Dear Colleagues:

I am delighted to inform you that the Production and Operations Management journal is now available electronically via Extenza e-Publishing Services. The journal archive starts with Volume 1, Issue 1 (Winter 1992). The subscription to this new online service is included as part of your membership in the POMS Society. Access to this journal will be controlled via your approved password. Extenza-EPs, our publications host, will send you an email regarding the password.

Please contact me (poms@fiu.edu) or Dr. Sriskandrajiah (poms@utdallas.edu) if you have any concerns or questions.

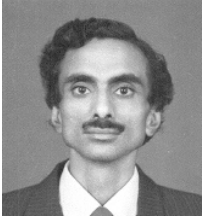
With best wishes

Sushil Gupta

Past President & POMS Fellow

Executive Director, POMS

BOOK REVIEWS ON OPERATIONS – STRATEGY LINKAGES

**Rajiv K. Srivastava**

Associate Editor, POMS Chronicle

Indian Institute of Management, Lucknow

E-mail: rks@iiml.ac.in

This review looks at two books published more than 75 years apart. The first, originally published in 1926, represents the beginning of modern mass production and the use of operations to create a superior competitive position. The second book, from 2002, describes how the best crafted strategies are incomplete without action plans that execute them, and the evolution of the discipline of “Execution” that facilitates such action on the ground. Both books emphasize the importance of blending vision with reality, through detailed attention to implementation that ultimately makes a strategy deliver.

“Today and Tomorrow”, Henry Ford with Samuel Crowther, Productivity Press (1988), originally published Doubleday, Page and Company (1926)

Henry Ford's introduction of the Model T car produced on the moving assembly line was perhaps the single most influential industry-transforming moment of the 20th century. Ford did not merely borrow ideas already in use for making incremental improvements. Using a combination of brilliance and common sense, and aided by production manager Charles Sorensen, he made changes that would propel many industries and their operations systems a quantum leap forward.

Many principles of lean manufacturing in fact owe their origins to Ford. Taiichi Ohno, creator of the Toyota Production System and Just In Time, treated the ideas implemented first at Ford's plants as the foundations upon which he built his own approach. This book in particular has been widely read and used as a reference for several decades in Toyota City, where Ohno expertly adapted and refined the concepts.

To translate his ideas into reality, Ford built his operations system on 3 pillars: products, processes and people. His product vision was based on standardization of best designs and methods, with the criteria that the product should be sturdy and light, economical to manufacture, and appearance – in that order. This vision resulted in the introduction of interchangeable parts that fit together every time, that didn't break down during use, and were so cheap to make that everyone could afford the products.

Ford's process vision was that of continuous and waste-free flow of material from iron ore mine to customer. The objective of his factory design concept was to facilitate smooth movement of materials and people, exploiting the flexibility provided by the fact that machines were now driven by electric motors rather than by gravity and wheel-and-pulley arrangements. Another innovation was modular assembly – the process of putting together subassemblies before installing them on a vehicle.

The people vision comprised a capable, trained and motivated workforce working in a coordinated way. He introduced innovative incentive structures with higher wages so that the worker who made the product could afford to buy it as well. The attention he paid to workforce selection, development, and welfare was also rather different from general practice at that time. Interestingly, despite all the specialization and division of labor he introduced, Ford was among the earliest to foster multi-skilling.

Ford was almost obsessively concerned with waste of material, labor and especially time: “Time waste differs from material waste in that there can be no salvage”. This emphasis also shows up in the “Seven Wastes” that form the foundations of JIT as enumerated by Ohno. A range of manufacturing and supply management initiatives helped reduce the total lead time, from iron ore to delivered product, to a mere 81 hours from the original 14 days, thus making Ford among the earliest proponents of time based manufacturing.

Ford summarized his managerial approach into three principles:

1. Do the job in the most direct fashion without bothering with red tape or any of the ordinary divisions of authority
2. Pay every man well – not less than six dollars a day – and see that he is employed all the time through forty-eight hours a week and no longer
3. Put all machinery in the best possible condition, keep it that way, and insist upon absolute cleanliness everywhere in order that a man may learn to respect his tools, his surroundings, and himself

To support his search for new ways of doing things, Ford conducted his own research in laboratories, and worked with others of his time who also sought new insights, including luminaries such as Thomas Edison and Harvey Firestone. This emphasis on research led to the development of several new materials and other synthetics/ composites, for example a straw-based steering wheel material called Fordite. The book also gives detailed descriptions of several innovations in manufacturing processes, much like the books by Ohno and Shigeo Shingo on Toyota and JIT.

Ford's empire eventually constituted a huge number of apparently diverse plants and product families. However most of them were connected to the motor industry in some form. His approach to ownership and control of production resources meant that his business included operations such as mines for iron ore and coal, glass making, flax, timber, and power generation among others. Likewise, his own transportation fleets included shipping boats in the Great Lakes and Atlantic coast regions, as well as railroads.

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Ultimately perhaps the extreme success of his business model, and his view of himself as a leading management thinker, bred his own failure. Some Ford concepts would perhaps even be considered outdated today, for example his views on full vertical integration would not match with contemporary concepts of core competence and supply chain management. It is now believed that many of the objectives he sought from such integration can be achieved without the financial ownership and physical co-location aspects that he espoused. His perspectives on product variety – “Any color as long as it’s black” – would also be considered anachronistic today. Some aspects of his approach to people have been viewed skeptically for decades, especially the oft-quoted “How come when I want a pair of hands I get a human being as well?”, and satirized by Charlie Chaplin in the classic movie “Modern Times”.

Many of Ford’s ideas were so different from conventional wisdom at the time that several of the contributions to manufacturing were actually lost to North America and the US, and it was left to Ohno and Shingo to revive and propagate them. Interestingly, perhaps in an indirect tribute to this book, when Ohno’s published the English version of one of his own books in 1988, he titled it “Just In Time for Today and Tomorrow”.

“Execution”, Larry Bossidy & Ram Charan with Charles Burck, Crown Business, 2002

Larry Bossidy, who worked with Jack Welch at GE and was later CEO of both Honeywell International and AlliedSignal, and Ram Charan, professor and management consultant, address the common problem of why business outcomes so often fall short of those predicted in the strategic planning process. Many strategic plans fail to deliver because the nitty-gritty of how to make them happen have not been thought through or articulated fully.

The authors describe “Execution” as a systematic process of rigorously discussing 'hows' and 'whats,' questioning, tenaciously following through, and ensuring accountability. It is a systematic way of exposing reality and acting on it, to minimize the gap between stretch and realism in goal-setting. Examples of EDS winning through superior execution, and Xerox and Lucent losing due to inadequate attention to it, are cited to illustrate the “execution difference”.

The reason CEO’s don’t give execution due attention is that it is not as glamorous or exciting as their other responsibilities. Disciplines like strategy, mergers and acquisitions, organizational restructuring, leadership development, and innovation are the thrilling aspects of being at the helm of a successful business. Actually getting things done or doing them never seems quite as fascinating. Bossidy and Charan beli-

ve that many people wrongly regard execution as detail work that’s beneath the dignity of a business leader – to the contrary, it is a leader’s most important job.

To quote an analogy, salespersons are always taught that you have to be able to close a sale; execution is the business leader’s analogy to what closing is to the salesperson.

The authors’ three basic beliefs are that execution is a discipline and integral to strategy; execution is the major job of the business leader; and execution must be a core element of an organization’s culture. The discipline of execution is based on a set of three building blocks: the leader’s essential behaviors; creating the climate for cultural change; and having the right people in the right place. Finally, the success of organizational execution is determined by the success of three core processes. The operations process is one these key processes together with the people process and the strategy process. Each of these processes includes critical decisions and trade-offs that determine an organization’s overall capability to execute well. Every leader must rigorously use the basic beliefs and building blocks to design, install, and operate the three core processes effectively.

Detailed planning of operations processes is a critical ingredient of systematic execution, since it provides the path to achieve strategic goals by breaking long-term output into short-medium term targets. It therefore forces putting reality into the numbers and provides a mechanism for ensuring that actions across the organization are integrated. Eventually this needs to translate into focused plans such as product development and launch schedules; manufacturing plans stipulating production outputs; and productivity plans aimed at improving efficiency.

While the book is not primarily centered on operations, it clearly emphasizes the importance of strategy-operations linkages and the need for detailed operations planning in the strategy process. Most examples of superior execution described in the book are companies with strong operations that serve as business case studies in their own rights.

For example, Dell’s build-to-order production model was founded not just on the visible and replicable aspect of direct selling. It also included execution of the strategy through supply chain redesign, strong inbound and delivery logistics, an agile manufacturing system, and electronic linkages. All these innovative practices have resulted in Dell becoming one of the best managed operations anywhere, with asset velocity sp high as to even achieve negative working capital.

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Wal-mart, in order to execute its everyday-low-price strategy, found operations ideas that established competitors like Sears and Kmart had never explored – dock-to-dock logistics, online information exchange with suppliers, and simplification of transactions to eliminate waste. At Bossidy's own company Honeywell, execution meant getting into details such as plant size rationalization, reallocation of responsibilities between manufacturing and quality, introduction of digitization and e-procurement, and self-directed work teams operating in cells.

Further operations linkages show up when execution is likened to the Six Sigma processes for continual improvement. Six Sigma was religiously practiced during Bossidy's years at GE as well as Honeywell, and served as the basis for process management and improvement. It involves a relentless pursuit of reality coupled with processes for constant improvement, an approach that requires significant changes in both thinking and action within the organization.

While the ideas presented in the book are not really revolutionary, they are surprisingly often neglected in reality. This is of course a common characteristic of several management initiatives when viewed in hindsight. The importance of the book for OM professionals is that a strategy-oriented book sees ground level operations-related issues as being critical to executing a strategy successfully. After all, as architect Mies van der Rohe said, "God is in the details".

Reference:

Flinchbaugh, J. & Jackson, T., The Extraordinary Vision of Henry Ford, Assembly Magazine, May 2003

2004 POMS BOARD MEMBERS AND OFFICERS

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CANCUN IN RETROSPECT



John J. Kanet, Ph.D.
 Niehaus Chair in Operations Management
 Dept. of MIS, OM, and DS
 University of Dayton
 Email: John.Kanet@notes.udayton.edu

Last August when Conference Co-Chair **Jeet Gupta** called me to ask me if I could be Program Chair for this year's conference he said " Jack you should do it! It will require some work but it will be a lot of fun." I wondered.

It was not just the 15th Annual POMS conference but also the 2nd World POM Conference, the joint project of the European Operations Management Association (EUROMA), the Japan Society for Production Management (JSPM), and the Production and Operations Management Society (POMS).

It truly qualified as a "World Conference, with participation by professionals from over 21 countries. The official conference language was English but there was also a special track of some 36 Spanish language papers (organized by Conference Co-Chair **José Machuca**) befitting the Cancun venue.

Our theme was "POM's Expanding Constellation". I think we did expand the Constellation of POM and we accomplished a lot for which all participants can be justifiable proud. Let me cite some statistics (unofficial):

- Number of submitted abstracts: 636
(a new constellation record!)
- Number of accepted abstracts scheduled: 540
- Number of registrants: 531
- Number of complete papers: 219
- Number of Sessions: 132

This year we did something different by introducing "invited" sessions and "college sponsored" sessions. The response to the call for such sessions was really gratifying. There were 30 such invited/sponsored sessions comprised of 127 presentations. I think they added greatly to the quality of the conference.

The quality of the conference was further enhanced by the 13 special sessions (5 tutorials, 3 workshops, 5 panels). With this conference, we launched a highly successful initiative to the business community with the Operations Advantage Group headed by **Marty Starr**, **Wick Skinner**, and **Joel Goldhar**. We had two superb plenary speakers. Mr. **Bart Groot** told the fascinating story of operations downsizing at

Dow Chemical in former East Germany. Thanks to Conference Co-Chair **Michiya Morita**, who arranged to have Mr. **Nampachi Hayashi** provide detailed insights into the Toyota philosophy of operations.

This year we recognized that POMS needs to focus on the lifeblood of the organization – its junior members and launched our first "Emerging Scholars Program"... something that I hope becomes a tradition with POMS.

The conference was a success because there were so many individual contributors. I cant list them all here but a few deserve a special note of recognition.

Thanks to the great work of **Chelliah Sriskandarajah** we had a highly successful response from the call for sponsors, with events sponsorships from business schools at University of Dayton, ESADE, University of Richmond, and Rollins College, as well as firms like SAP and ILOG.

Mike Gorman my UD colleague did an outstanding job as editor of the program booklet(s). His effort didn't stop as editor, he was also "chief purchasing agent" and negotiator with the printer, and was busy on the phone right up until the day before the conference expediting the booklets through customs at the Cancun airport.

We can all thank **Regina Stukenborg**, who served as my assistant here at UD, for the flawless organization of the conference schedule. I clearly recall back in February my feeling of terror as to whether the program schedule was doable in time (not to mention doable at all!). It was then that Regina sat me down and said, "Jack relax, we can do it!" What a relief that was to know I had such a confident and competent assistant.

Finally, I don't think the general membership of POMS knows what dedicated leadership we have in **Sushil Gupta** and **Jim Gilbert**. As Executive Director of POMS, Sushil does not talk much; he is too busy doing. Without his persistent attention to detail and commitment to continuous improvement, the conference would not have been so flawlessly executed. And if you liked the Cancun conference, then you should certainly thank Jim who serves as POMS Vice President of Programs. He's the guy that spent countless hours handling all the hotel negotiation, coordination, and communication, making sure we stayed within budget and got the best deals possible -- right down to the last cocktail olive.

My experience in the last months dealing with so many POMS members all pulling in the same direction solidified my feeling that POMS is my professional organization of choice. Jeet was right. It was a lot of fun!

IMAGES FROM POMS 2004 CONFERENCE, APRIL 2004, CANCUN



IMAGES POMS 2004 CONFERENCE, APRIL 2004, CANCUN



FELLOW OF POMS AWARD

**Martin K Starr**

Chair, POMS Council of Past Presidents
Distinguished Professor of
Operations Management Emeritus
Crummer Graduate School of Business
Rollins College
Email: mstarr@rollins.edu

When Aleda Roth became President of POMS over two years ago, she asked me to put together a proposal for the Fellow of POMS Award. To evaluate the opportunities and possibilities required contacting people from other societies that had experience with fellowship programs.

There are many of them reflecting an incredible number of different approaches. Once the pros and cons had been sorted out, tentative recommendations were discussed with various members of our society who were familiar with the history and culture of our POMS organization.

It is clear that adoption of fellowship recognition is essential to put POMS on the same level with other scientific and professional societies. All major, professional societies have used fellowship to solidify their base of support. The foundation of great societies is composed of people. Articles and books are written by researchers. Students are inspired by their teachers. Problems are solved by P/OM executives who apply their art and science to do it better the first time. Our cases demonstrate conclusively that people are the crucial, scarce resource. Successful professional societies must recognize the contribution of their members in a proper way.

For appropriate fellowship recognition, there are two main options. First, some societies consider the title of Fellow to be a membership category. (You lose it when you leave.) Second, Fellow designation is presented as an award. It is given to recipients for life. The title is (solely) an honor that does not bestow any special status nor does it provide expanded privileges.

The first category of fellowship has caused problems in various societies that have employed it. For example, ORSA, at its inception, limited positions on the Board to Fellows of the society. Non-fellows felt disenfranchised which led ORSA to discontinue the fellowship member level. In the Fall of 2002, INFORMS (created by merger of ORSA and TIMS) reestablished fellowship award status, but this time it was based on the second option.

A strong infrastructure is crucial for the well-being of professional societies. To achieve full commitment to publications, meetings, and service to the society, recognition of significant contributions is essential. This supports high personal involvement and continued retention, as well as attracting new contributors who respond positively to the environment of appreciation for contributions.

The fact that fellowship programs are considered to act in this way became evident as data revealed that fourteen out of fourteen societies studied (major organizations from every field of science) had active and on-going fellowship programs.

Following the POMS-Cancun Meeting (April 30 – May 3, 2004) POMS President Gabriel Bitran set in motion the establishment of a committee to exam-

ine appropriate conditions for awarding members the honorary plaque designating them as a Fellow of POMS. This Committee was asked to propose criteria and suggest candidates for recognition at the 2005 POMS-Chicago Meeting to be held in May. The Committee is composed of the Past Presidents of POMS who by Board agreement were the first recipients of the Fellow of POMS Awards at Cancun.

A consensus emerged in discussions at the POMS-Cancun Meeting. It has been strengthened by conversations with members from many areas of academia and industry since then. There is agreement that the organizational model for POMS is that of a professional society without hierarchy. In accord with that, the fellow's award designation should be based on broad inclusion of the membership of POMS.

Recognition of contributions must cross all geographic boundaries. There should be a growing body of Fellows who meet regularly at all meetings. Selection must not be constrained by industrial affinities, governmental activities, and academic proclivities. Contribution should be defined to be representative of a spectrum of well-informed opinion from a variety of sound constituencies concerning what constitutes accomplishments of merit.

There are many options to be examined. Societies studied to date show great variation in their standards for the Fellows Award. Some examples: one professional society requires 10 consecutive years of membership; another demands 12 years in the profession; one has a minimum age condition; quite a few limit the total number of fellows as a percent of total membership; almost half impose a limitation on the number of new fellows per year. The limits on numbers tend to be applied by large and well-established societies. Accomplishments that merit consideration for the Fellow of POMS Award must be carefully defined.

Type I errors (bypassing someone worthy of the award) are undesirable, but they can be remedied. Type II errors (an award is made that is not justified) cannot be remedied. Type II errors are visible and disheartening for those who previously received the award. They demoralize those who strive to earn the fellows award. The POMS Award Committee will make every effort to minimize both of these two types of errors. The Committee will be particularly cautious about Type II since Type I can be fixed. Every effort will be made to listen and to be responsive.

A few statistics about the supply of candidates for possible awards will help to explain why a Fellowships Award program is well-timed. POMS was founded 15 years ago (June 30, 1989). There have been on average twenty members of the POMS Board serving two-year terms during that time. This means that about 150 people have served the society in an administrative capacity. During the same period there have been about fifty issues of the POM Journal—including special issues. This works out to about 350 articles contributed by as many as 1000 authors with hundreds of editors who have refereed accepted papers as well as rejected papers.

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Fellow of POMS ... from page 22

An important source of potential candidates for the Fellow of POMS Award is in industries around the world. POM executives have been solving vital production and operations problems for decades. A similar statement can be written about the teachers who have contributed teaching innovations to the POM profession. Only recently have candidates come forward to describe their work in response to the Wick Skinner award for innovations in teaching. The time has come to recognize industry practitioners and teachers whose contributions earn them the right to be considered for the honor of receiving the Fellow of POMS Award.

Scores of POMS members have created and chaired meetings all over the world. There have been some outstanding contributions which involved years of work out of the limelight. Intellectual leaders in the POM field have won awards for research ideas and results which may be overlooked without a properly orchestrated Fellow of POMS Award program. It is fitting that we have this Fellow Award program in place for the 15th anniversary of POMS.

POMS Fellows

- Kalyan Singhal, University of Baltimore
- Martin K. Starr, Rollins College
- Sushil K. Gupta, Florida International University, USA
- Roger W. Schmenner, Indiana University, USA
- Wickham Skinner, Harvard Business School (Retired), USA
- John A. Buzacott, York University, Canada
- Robert H. Hayes, Harvard Business School, USA
- Aleda V. Roth, University of North Carolina at Chapel Hill, USA

IMAGES POMS 2004 CONFERENCE, APRIL 2004, CANCUN



POMS Fellows Sushil Gupta, Bob Hayes, Roger Schmenner, Aleda Roth, and Marty Starr with President-Elect Kasra Ferdows and President Gabriel Bitran

HOW ABOUT A POMS JUNIOR FACULTY FORUM?



Shailesh Kulkarni
Assistant Professor
of Management Science
University of North Texas
Email: kulkarni@unt.edu

The recently concluded World POM conference and POMS Annual meeting provided several interesting opportunities for academics and practitioners alike. Notwithstanding the spectacular(!) location, a highlight of this conference from the perspective of junior faculty was the Emerging Scholars Program (ESP).

Having been only to doctoral consortia in years past, the ESP was strikingly different. It allowed newly minted PhDs as well as participants such as myself, who have been junior faculty for a few years, to network and exchange ideas with contemporaries from around the world. We discussed common issues and concerns and more important, received friendly advice and keen insights from POM academic stalwarts. Upon returning from the conference, I reflected upon my experience at the ESP. Insofar as the ESP for next year was concerned, I conjectured that junior faculty participants of 2004 would only be able to partake as organizers, if at all. While such service would definitely merit due response, wouldn't it be great if a critical mass of junior faculty, such as that assembled at the ESP 2004, could meet again in an ESP-like structured setting?

Upon some cogitation, I suggested the creation of a Junior Faculty Forum (JFF) under the aegis of POMS. I am pleased to note that the idea was well received by several POMS officers. They spurred me on and the reason for this article is to garner interest and solicit ideas/opinions regarding the creation of POMS JFF.

Some initial thoughts are as follows.

POMS JFF (this moniker seemed convenient) could be structured in a manner similar to a typical college or subdivision. This entails having a junior faculty member (elected/nominated) as President and a senior faculty member(s) as Advisor(s). The hierarchy could also include additional junior faculty as Vice-President, Secretary etc. in order to foster more interest and share responsibility.

So, what would be the activities of such a forum?

- To begin with, the forum could meet officially at the annual POMS meeting.
- The forum could begin a quarterly online newsletter highlighting the research, teaching, service accomplishments of junior faculty members, akin to a faculty "spotlight". The newsletter could include articles from junior (as well as tenured) faculty relating to current developments and trends in the field, which are particularly important from a junior faculty member's standpoint.
- One can also envision advanced activities including, say, a best paper competition sponsored by POMS JFF.

I am aware that several other professional organizations have such focus, but I believe that POMS JFF would be unique in the sense that it would focus on junior faculty who have primary interest in POM and are expected to be future POM thought leaders.

I hope this write-up generates enough interest to eventually see POMS JFF come to fruition. It would be great to have feedback from junior as well as senior faculty alike and get an informal discussion going. Finally, and I should have said this at the outset, Viva Cancun!!



Participants of Emerging Scholar's Program, Cancun Conference

NEWS FROM POMS COLLEGES

COLLEGE OF SUPPLY CHAIN MANAGEMENT

We enjoyed meeting many of you at the POMS conference in Cancun. We were very happy that many of you were able to join us for some of the supply chain college sessions. Finally, it was extremely helpful to get together and discuss future plans for the college at the "Supply Chain College Business Meeting."

Since some members were unable to join us and we suspect many of those present would also appreciate a summary, we thought it would be useful to recap our discussions during the business meeting.

As many of you are aware, the college, in addition to planning sessions at the society's conferences (like the one in Cancun), also planned to host its own focused conference in 2005. We have suggested to the editor-in-chief of the POM journal that the society's conference could lead to a special issue of the journal. We plan to execute on these proposals in the near future.

At the business meeting, a number of people suggested possible roles that the society could fill during the next few years. One suggestion was that the college could focus on identifying *new problems*. Our academic discipline, like most other academic disciplines, often places considerable emphasis on discovering *new solutions* to well-known problems. Some college members however felt that it would be beneficial to identify new problem areas that could provide fertile ground for other people's research.

A second stream of suggestions related to the relationship between industry and academia. A number of people expressed interest in promoting industry-academia interaction in a number of ways. Proposals included: inviting practitioners to speak at and participate in supply chain college events, and arranging tours of interesting plants and facilities during or around conferences. Many participants were also eager to know more about successful examples of industry-university collaboration through specific centers for example and suggested that it would be useful to dedicate time to this important topic at future conferences.

There was considerable interest in the sessions and the business meeting to know more about new cases and case-based teaching. A quick poll to judge the usefulness of a web-based forum to discuss the merits of a case seemed to suggest that the college should push this idea.

Finally, the two of us would like to organize elections for new and additional office bearers for the college. We plan to stay involved but feel the college could use additional leadership. We will be in touch soon with administrative details. Thanks.

Marshall Fisher and Ananth Raman

COLLEGE OF SERVICE OPERATIONS

The POMS College of Service Operations desires to promote the rapid dissemination of cutting-edge and innovative service operations research. Toward that end, and based on feedback from POMS members, the CSO has begun developing a focused online working paper database (WPD). The WPD will contain local copies of in-process ("working") research papers and conference presentations related to service operations management, all fully catalogued and searchable.

The WPD will be database-driven and entirely web-enabled. Notable planned features include:

- Browser-based material contribution and directory exploration interfaces
- Author, keyword, and Boolean search functions
- A commenting function (optional per author's preference) will provide a means for engaging in focused discussion with other interested researchers about a particular document
- Secure and password-protected logins for managing accounts and documents

The WPD is currently being developed as a class project by six teams of Master of Science, Information Systems (MSIS) students at the University of Cincinnati College of Business. A working prototype should be available by late summer, 2004. Some final development may be required after that to bring it fully up to specification and made available to members on a preliminary basis. Once completed, the UC College of Business has offered to host and maintain the WPD indefinitely on one of its web servers as a service to the society.

If you have feedback, suggestions, or questions about the working paper database, please contact Craig Froehle at craig.froehle@uc.edu or (513) 556-7174.

POMS College of Service Operations

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CALL FOR PAPERS

Production and Operations Management**Special Issue: *Management of Technology***

Submission Deadline: Nov. 19, 2004

Guest Editor: **Cheryl Gaimon**, Georgia Institute of Technology, cheryl.gaimon@mgt.gatech.edu

Special Issue: *Closed Loop Supply Chain*

Submission Deadline: Dec 31, 2004

Guest Editors: **V. Daniel R. Guide, Jr.**, The Pennsylvania State University, dguide@psu.edu; **Luk N. Van Wassenhove**, INSEAD, luk.van-wassenhove@insead.edu

Special Issue: *E-Auctions for Procurement Operations*

Submission Deadline: Mar 31, 2005

Guest Editors: **Richard Steinberg**, University of Cambridge, r.steinberg@jims.cam.ac.uk; **Martin Bichler**, Technische Universität München, martin.bichler@in.tum.de

Additional Information about all POM Special Issues can be found at POMS Website: <http://www.poms.org>

Journal of Operations Management**Special Issue: *The Evolution of the Field of Operations Management***

Submission Deadline: 07 January 2005

For additional details contact the guest editor:

Linda G. Sprague (lgsprague@ceibs.edu)

Special Issue: *Offshoring of Service and Knowledge Work*

Submission Deadline: Feb 1, 2005.

Guest Editors: **William Youngdahl**, and **Kannan Ramaswamy**, Thunderbird, The Garvin School of International Management, ramaswak@t-bird.edu; **Rohit Verma**, University of Utah, rohit.verma@business.utah.edu; **Bidya S. Sahay**, Management Development Institute, bssahay@mdi.ac.in

Special Issue: *Supply Chain Management in a Sustainable Environment*

Submission Deadline: April 15, 2005.

Guest Editors: **Vaidy Jayaraman**, University of Miami, vaidy@miami.edu; **Jonathan Linton**, Rensselaer Polytechnic University, linton@rpi.edu

Additional Information about all JOM Special Issues can be found at JOM Website: <http://www.mgt.ncsu.edu/jom/>

International Journal of Manufacturing Technology and Management**Special Issue: *Supply Chain Management Practices Across the Globe***

Submission Deadline: Oct 31, 2004

Guest Editor: **Vidyaranya B. Gargeya**, vbgargey@uncg.edu and **Kwasi Amoako-Gyampah**, kwasi_amoako@uncg.edu, The University of North Carolina at Greensboro.

Supply Chain Forum: An International Journal**Special Issue: *Trust and Collaboration in the Supply Chain***

Submission Deadline: Feb 1, 2005

Guest Editor: **Suzanne de Treville**, HEC - University of Lausanne, suzanne.detreville@hec.unil.ch

CONFERENCES

**Fifth International Conference on Operations and Quantitative management (ICOQM-V)
October 25-27, 2004.**

Location: Hanyang University, Seoul, S. Korea

Additional Details: <http://icoqm-v.digital.re.kr>

**8th Annual Conference
The Society of Operations Management
December 17-19, 2004**

Location: National Institute of Industrial Engineering (NITIE), Mumbai, India.

Additional Details: <http://www.nitie.edu/som8.htm>

ACADEMIC JOB ANNOUNCEMENTS

Department of Management

David Eccles School of Business
University of Utah
Salt Lake City, UT 84112

The David Eccles School of Business of the University of Utah announces the availability of one or more open rank tenure-track faculty positions in Production and Operations Management (POM). Candidates should hold a Ph.D. in Operations Management or a related field, or show evidence that they will be awarded their doctorate by August 1, 2005. Filling these positions is subject to University funding and approval.

These positions require high levels of scholarship, teaching, and collegiality. The successful candidates will be able to work with established faculty in one or more of the department's research areas, which include Service Operations, Product/Process Development & Innovation, Technology Management, Quality Management, Operations Strategy, and Supply Chain Management. The David Eccles School of Business (<http://www.business.utah.edu>) offers degree programs at the undergraduate, master's, and doctoral levels, plus non-degree executive programs, and teaching opportunities in Operations Management are available at all levels. Department of Management faculty members are expected to teach both core courses and electives in their discipline at any level as needed. Pre-tenure faculty members typically teach three semester-long courses each academic year.

The University of Utah is located in Salt Lake City, at the foot of the Wasatch Mountains. Salt Lake City was the site of the 2002 Winter Olympics and offers excellent opportunities for outdoor recreation, including easy access to the Rocky Mountains, the red rock country of the Colorado Plateau, and eight national parks. Salt Lake City is the center of a metropolitan area with a population of approximately one million residents and has extensive arts and cultural activities and a major airport. The University Research Park is home to more than 30 technology-oriented businesses with close research and operational ties to the University.

Interested individuals should send (1) a letter indicating interest, (2) a complete vita, (3) writing samples, (4) evidence of teaching ability, and (5) three letters of recommendation by **DECEMBER 1, 2004** to:

Dr. Stephen B. Tallman
Chair, Department of Management
University of Utah
David Eccles School of Business
1645 E. Campus Center Dr., Room 106
Salt Lake City, Utah 84112-9304
MGTSBT@business.utah.edu
801/ 581-7415

Representatives from the DESB will be available to talk to potential candidates at the INFORMS and DSI conferences in October/November 2004. Preference will be given to applications received prior to these conferences.

The University of Utah is an Equal Opportunity/Affirmative Action employer, encourages applications from women and minorities, and provides reasonable accommodation to the known disabilities of applicants and employees.