JOMSA

Japanese Operations Management and Strategy Association

オペレーションズ・マネジメント&ストラテジー学会

The International Symposium on Operations Management and Strategy

JOMSA 第3回全国研究発表大会プログラム集

Craftsmanship and Technological Capabilities for Operations in the 2010s

Dates: June 17-19, 2011

Venue: Faculty of Business Administration
Yokohama National University

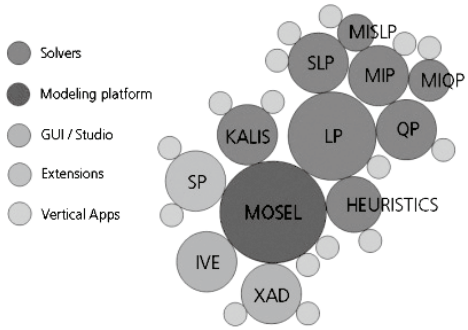
会　場：横浜国立大学経営学部
79-4 Tokiwadai, Hodogaya-ku
Yokohama 240-8501 Japan

YNU

オペレーションズ・マネジメント&ストラテジー学会
Japanese Operations Management and Strategy Association

日本で20年の実績のある、
数理計画・最適化コンポーネントの世界的
デファクトスタンダードFICO Xpress
ファイコ エクスプレス

FICO™ Xpress



FICO Xpressは、数理計画・最適化ソフトウェアの分野において、世界レベルのデファクト・スタンダード製品です。

最適化モデル生成（Xpress-Mosel）と、その最適化ソルバー（Xpress-Optimizer）を中心にして、次の要望にお応えしています。

- Xpress Linear Programming
- Xpress Mixed Integer Programming
- Xpress Quadratic Programming
- Xpress-SLP Non-Linear Programming
- Xpress-Kails Constraint Programming

米国FICO社とMSI株式会社は新たな強化バージョン『FICO™ Xpress 7.1』を発売です（2010年11月リリース）。この新バージョンではパラレルコンピューティング技術を備え、企業における業務上の最も複雑な課題を以前よりも更に数倍早く解決させることが可能となりました。

最大の改善点は、パラレルコンピューティングを用いた新たな最適化エンジンです。

『FICO™ Xpress 7.1』では、高速のマルチスレッドアルゴリズムによって、特別な設定を必要とせずに複数のCPUコアを十分に活用します。さらに、新しいドラッグアンドドロップ型のエディタを使用してプロトタイプの提供と展開を迅速に行いつつ、業務モデルに対応したグラフィカルインタフェースを作成できます。

FICO Xpress 7.1 のリリース目的は、
1. Solving ultra-large scale optimization problems
2. Design faster
3. Make better decisims　です。

ぜひとも、『FICO™ Xpress 7.1』を実際にご使用いたたき、ご評価ください。詳しくは、下記のウェブサイトをご覧ください。

- FICO Xpress7 「新バージョン製品概要」
- FICO Xpress7 「製品ダウンロード」
- FICO Xpress7 「お見積り・ご購入」

新アドレス
http://www.msi-jp.com/xpress/

Xpress メニュー

- Xpressホーム
- Xpress製品概要
- Xpress製品情報
- Xpress製品・技術サポート
- Xpress学習・研修
- FICO／MSI アカデミック支援
- 世界のXpress ご使用ユーザー
- Xpressお問い合わせ
- Xpress アプリケーション・モデル事例
- FICO U.S. 英語情報リスト
- MSI カンパニー情報

Xpress 製品概要

●Xpress サポートOS

1. Win
2. Linux
3. Unix

●Xpress ライセンス・タイプ

1. Desktop
2. Server
3. Floating

（Xpress はクラウド・コンピューティング環境をサポートします。）

●Xpress 製品

1. Xpress-Optimizer
2. Xpress-Mosel／IVE
3. Xpress-SLP
4. Xpress-Kalis
5. USB Dongle

上記詳細は、弊社WEBサイト **www.msi-jp.com/xpress/**をご覧ください。

【お問い合わせ】
FICO Xpress 総販売元
MSI株式会社
〒261-7102 千葉市美浜区中瀬2-6
WBGマリブウエスト2F
TEL 043-297-8841
FAX 043-297-8836
xpress@msi-jp.com

International Symposium on Operations Management and Strategy

JOMSA 第3回全国研究発表大会

Craftsmanship and Technological Capabilities for Operations in the 2010s
June 17-19, 2011, Yokohama National University, Japan

Conference Venue: Faculty of Business Administration, Yokohama national University
79-4 Tokiwadai, Hodogaya-ku, Yokohama 240-8501 Japan
Classrooms 106, 105, 107, 204, 205, 206 at Lecture Hall 1 Business (N3-5)
Registration: Friday, June 17, 17:30-19:00 at Renga-Kan (S1-4 Cafeteria I)
Saturday, June 18, 8:30-17:30 at Lecture Hall 1 Business (N3-5)
17:50-19:00 at Porty (S1-5 University Hall, 3F)
Sunday, June 19, 8:30-16:30 at Lecture Hall 1 Business (N3-5)
Access to the Venue: http://www.ynu.ac.jp/english/access/index.html
Campus Map: http://www.ynu.ac.jp/english/access/map_campus.html

開催場所：横浜国立大学経営学部
〒240-8501 横浜市保土ヶ谷区常盤台 79-4
経営学部講義棟 1 号館（N3-5）106, 105, 107, 204, 205, 206 講義室
受付：6 月 18 日（土） 8:30-17:30 経営学部講義棟 1 号館（N3-5）
17:50-19:00 Porty (S1-5 大学会館 3 階)
6 月 19 日（日） 8:30-16:30 経営学部講義棟 1 号館（N3-5）
アクセス情報：http://www.ynu.ac.jp/english/access/index.html
キャンパス地図：http://www.ynu.ac.jp/english/access/map_campus.html

Japanese Operations Management and Strategy Association
オペレーションズ・マネジメント＆ストラテジー学会
Yokohama National University
横浜国立大学

Symposium Program

	ISOMS 2011 Time Table: Friday, June 17, 2011
18:00-20:00	Welcome Reception @Renga-Kan (S1-4 Cafeteria I)

	ISOMS 2011 Time Table: Saturday, June 18, 2011
9:00-9:40	Opening Ceremony @Classroom 106 (N3-5 Lecture Hall 1 Business)
9:40-10:40	Plenary Speech @Classroom 106 Emerging Supply Chain Issues in the 2010s Indiana University　Prof. Barbara B. Flynn
10:40-11:00	Break
11:00-12:30	Parallel Sessions @Classrooms 106 and 105
12:30-14:00	Lunch @Renga-Kan (S1-4 Cafeteria I)
14:00-15:00	Plenary Speech @Classroom 106 Japanese Manufacturing System 2011 - Its Capability and Challenges University of Tokyo　Prof. Takahiro Fujimoto
15:00-15:20	Break
15:20-16:50	Parallel Sessions @Classrooms 107 and 105
17:00-17:50	Q&A Panel Session @Classroom 107
18:00-20:00	Dinner @Porty (S1-5 University Hall, 3F)

	ISOMS 2011 Time Table: Sunday, June 19, 2011
9:00-10:30	Parallel Sessions @Classrooms 106 and 105
10:30-10:50	Break
10:50-11:50	Plenary Speech @Classroom 106 Research Issues in Operations Management for Semiconductor Manufacturers Kobe University　Prof. Hirofumi Matsuo
12:00-13:30	Lunch @Porty (S1-5 University Hall, 3F)
13:30-15:00	Plenary Speech @Classroom 106 Monozukuri: My Approach to Manufacturing Toyota Motor Corporation　Mr. Katsuaki Watanabe
15:00-15:20	Break
15:20-16:20	Parallel Sessions @Classrooms 107 and 105
16:20-16:50	Break
16:50-17:00	Closing Ceremony @Classroom 106

JOMSA 第 3 回全国研究発表大会プログラム

	JOMSA 理事会・各種委員会 2011 年 6 月 17 日(金)
13:00-16:00	各種委員会 経営学部研究棟(N3-1)4 階 403 会議室・談話室
16:00-17:00	理事会 経営学部研究棟(N3-1)4 階 403 会議室

	JOMSA 第 3 回全国研究発表大会タイムテーブル 2011 年 6 月 18 日(土)
9:00-9:40	開会式 106 講義室(経営学部講義棟 1 号館、N3-5)
9:40-10:40	基調講演Ⅰ 106 講義室 Emerging Supply Chain Issues in the 2010s Indiana University Prof. Barbara B. Flynn
10:40-11:00	休憩
11:00-12:30	研究発表会 204、205、206 講義室
12:30-14:00	昼休み
14:00-15:00	基調講演Ⅱ 106 講義室 Japanese Manufacturing System 2011 – Its Capability and Challenges University of Tokyo Prof. Takahiro Fujimoto
15:00-15:20	休憩
15:20-16:50	チュートリアル・セッションA:サービス・イノベーション研究のフロンティア 106 講義室 司 会:神戸大学 伊藤 宗彦 ①リテール・イノベーション ーGMAP社のケース 神戸大学 南 知恵子 ②IKEAのサービス・イノベーション 京都産業大学 森村 文一 ③神戸大学におけるサービス・イノベーション研究の総括 神戸大学 伊藤 宗彦
17:00-17:50	2011 年度定期総会
18:00-20:00	懇親会 於 Porty (大学会館 3 階、S1-5)

	JOMSA 第 3 回全国研究発表大会タイムテーブル 2011 年 6 月 19 日(日)
	研究発表会 204、205、206 講義室
10:30-10:50	休憩
10:50-11:50	基調講演Ⅲ 106 講義室 Research Issues in Operations Management for Semiconductor Manufacturers Kobe University Prof. Hirofumi Matsuo
12:00-13:30	昼休み
13:30-15:00	基調講演Ⅳ 106 講義室 私のものづくりのマネジメント トヨタ自動車株式会社副会長 渡辺捷昭氏
15:00-15:20	休憩
15:20-16:50	チュートリアル・セッションB:衆知を集めたオペレーションの高度化 106 講義室 総合司会:青山学院大学 天坂 格郎 司会進行:青山学院大学 水山 元 ①【商品企画】市場予測とソリューション 青山学院大学 水山 元 ②【開発設計】CAE 最適化設計法 青山学院大学 天坂 格郎 ③【開発生産準備】フロントローデングとマネジメント 富士ゼロックス株式会社 影山 敏一 ④【生産】生産と知的オペレーション キヤノン株式会社 中川 義之
16:50-17:00	閉会式 106 講義室

Greetings

Welcome to the International Symposium on Operations Management and Strategy and the Third National Conference of the Japanese Operations Management and Strategy Association!

Organizing Committee Chair
Yoshiki Matsui, Yokohama National University

It is my honor and pleasure to hold the joint conference of the International Symposium on Operations Management and Strategy and the Third National Conference of the Japanese Operations Management and Strategy Association (JOMSA) in Yokohama, a gateway to the Western culture. As a representative of the hosting organization, Yokohama National University (YNU), I would like to welcome all the participants in the conference to the campus of YNU with comfortable natural environment, and wish them meaningful and exciting moments to widen their perspectives and deepen their understandings on the operations management and strategy. This joint conference picks up a classical but critical main theme, Craftsmanship and Technological Capabilities for Operations in the 2010s, emphasizing on the interaction between craftsmanship and high-technology to solve practical managerial issues concerning different operations systematically and creatively.

JOMSA had been established to host the Third World Conference on POM in Tokyo, which was so successful with more than 400 presentations and delegates from all over the world that several special issues of refereed international journals were edited from the selected papers presented at the world conference. The inaugural issue of the Journal of Japanese Operations Management and Strategy (JOMS) was published in 2010 as a special issue featuring quality papers generated from the world conference. The second and the latest issue of JOMS recently published has three papers written in English. JOMSA is a three-year old born-global academic society keeping close partnerships with POMS and EurOMA. Targeting the next world conference to be held in Amsterdam, we decided to give the third annual meeting of JOMSA more global flavor and hold the international symposium concurrently. The symposium may be a good step towards the world conference in next year for most JOMSA members. JOMSA needs collaboration and commitment from all the members to be a globally influential academic society in the area of operations management and strategy, particularly to respond to new challenges such as sustainable operations, emergent and humanitarian logistics and supply chains, error-free service operations and service innovation.

Due to difficult situations in eastern Japan caused by terrible earthquakes and subsequent accidents at the power plants, many foreign people made up their mind not to attend the symposium this time and withdraw the papers they had already submitted, unfortunately. On the other hand, we can have four excellent plenary speakers, Prof. Barbara Flynn at Indiana University, Prof. Takahiro Fujimoto at the University of Tokyo, Prof. Hirofumi Matsuo at Kobe University, and finally Mr. Katsuaki Watanabe, a vice chairman of Toyota Motor Corporation. They will talk about many current issues various operations managers are tackling with and give us deep insights into what we should do as academics to overcome the difficulties at present and in the future. The annual meeting of JOMSA includes two tutorial sessions in the program, one is concerned with service innovation by a group of researchers at Kobe University, and another is to reconsider collaborative approach to operations management from perspectives of academics and practitioners. With the presentations of interesting and pioneering works, this joint meeting may provide the best opportunity to closely interact and network each other for possible future collaborations, although the size is not as large as the world conference in 2008.

Taking this opportunity, I would like to show my appreciation to plenary and tutorial speakers, authors of papers, presenters at parallel sessions, organizing and program committee members, and student support staff for their enormous efforts to realize this conference. I hope all the delegates may really enjoy the program and build academic relationships steadily. All the best!

The Journal of Japanese Operations Management and Strategy
オペレーションズ・マネジメント＆ストラテジー学会論文誌

The mission of The Journal of Japanese Operations Management and Strategy (JOMS) is to serve as the primal research journal in operations management in Japan. The journal publishes academic research into the problems and concerns of managers who design and manage the product and process in manufacturing and service industries. It covers all the operations related issues such as the effective and efficient management in product development, procurement, production, distribution and marketing, manufacturing/operations strategy, decision makings in global operation, supply chain management, and service sciences among others. The journal welcomes the submission of rigorous and scientific research papers using any research paradigm such as social science, case study, and mathematical modeling.

JOMS Editorial Board

Symposium Session Schedule

	ISOMS 2011 Time Table: Friday, June 17, 2011
18:00-20:00	Welcome Reception @Renga-Kan (S1-4 Cafeteria I)

	ISOMS 2011 Time Table: Saturday, June 18, 2011	
9:00-9:40	Opening Ceremony @Classroom 106 (N3-5 Lecture Hall 1 Business)	
9:40-10:40	Plenary Speech @Classroom 106 Emerging Supply Chain Issues in the 2010s　Indiana University　Prof. Barbara B. Flynn	
10:40-11:00	Break	
	Classroom 106	Classroom 105
	A1 Session: Supply Chain Modelling Chair: Tsutomu Mishina	B1 Session: Process Improvement Chair: Phan Chi Anh
11:00-11:30	A1-1 A Throughput-Maintaining Decision Strategy for a Production and Sales Simulation Game Beiyu YANG, Motonari TANABU, and Ryo SATO	B1-1 The role of Shop Floor (Genba): Bridging Ex-ante and Ex-post Productivity Nobuyuki Inamizu, Takahiro Fujimoto, Mitsuhiro Fukuzawa, and Nobutaka Suzuki
11:30-12:00	A1-2 How does uncertainty of customer's preference influence after-sales service decisions in a supply chain? Hisashi Kurata	B1-2 Shop-Floor Communication and Practices for Competitive Advantage: An Empirical Analysis of Quality Management Jing Zeng, Phan Chi Anh, and Yoshiki Matsui
12:00-12:30	A1-3 SYNTHESIZING DIFFERENT ASPECTS ON PUBLIC TRANSPORTATION BY USING A COMBINED AHP-DEA METHOD Szabolcs Duleba, Harumi Miyano, Kei Ogiwara, and Tsutomu Mishina	B1-3 EMPIRICAL STUDY ON TRANSFERABILITY OF KAIZEN PRACTICES Phan Chi Anh, and Yoshiki Matsui
12:30-14:00	Lunch @Renga-Kan (S1-4 Cafeteria I)	
14:00-15:00	Plenary Speech @Classroom 106 Japanese Manufacturing System 2011 - Its Capability and Challenges University of Tokyo　Prof. Takahiro Fujimoto	
15:00-15:20	Break	
	Classroom 107	Classroom 105
	C2 Session: Inventory and Sales Models Chair: Peijun Guo	B2 Session: Capabilities and Values Chair: E. James Flynn
15:20-15:50	C2-1 Inventory Control System based on Stochastic Diffusion Model Masatoshi Tanaka, Naomichi Suzuki, Kijung Sung, and Kazuhiro Kasai	B2-1 An Experimental Measure of Operational Capabilities: an empirical study Osam Sato
15:50-16:20	C2-2 Innovation of Business and Sales Operation Employing TMS: Construction of Toyota Sales Marketing System Kakuro Amasaka	B2-2 EFFECT OF WORK VALUES ON WORK OUTCOMES: FOCUSING ON PRODUCTION AND TECHNICAL WORKERS Yutaka Ueda and Yoko Ohzono
16:20-16:50	C2-3 Analyzing a Single-Period Inventory Problem with Regret One-Shot Decision Approaches Peijun Guo	B2-3 Strategic Management Cycle and Dynamic Linkage of Business Processes Michiya Morita, E.James Flynn, and Shigemi Ochiai
17:00-17:50	Q&A Panel Session @Classroom 107 Panelists: Barbara B. Flynn, E. James Flynn, and Brooke A. Saladin	
18:00-20:00	Dinner @Porty (S1-5 University Hall, 3F)	

	ISOMS 2011 Time Table: Sunday, June 19, 2011	
	Classroom 106	Classroom 105
	A3 Session: Knowledge and Innovation Chair: Hajime Mizuyama	B3 Session: Business Models of Manufacturing and Services Chair: Ayako Kawai
9:00-9:30	A3-1 PROPOSAL AND EFFECTIVENESS OF A HIGHLY COMPELLING DIRECT MAIL METHOD "PMOS-DM": STRATEGIC APPLICATION OF STATISTICS AND MATHEMATICAL PROGRAMMING Hisatoshi Ishiguro, Itsumi Matsuo, and Kakuro Amasaka	B3-1 A Swarm of Medium-sized Enterprises Existing for a Long Time: Another "Galapagos Islands' phenomenon" turning up in Japan Taichi Kishimoto, Yasuyuki Kishi, and Shohei Hamamatsu
9:30-10:00	A3-2 KNOWLEDGE-BASED MANAGEMENT IN VIETNAM:HOW TO APPLY TO ODA PROJECTS NGUYEN ANH THU and PHAN CHI ANH	B3-2 VISUALIZATION OF WORK PROCESSES OF SOFTWARE DEVELOPMENT - DEVELOPMENT OF A VISUALIZATION TOOL, "A-PPNS"- Hirotake Sakai and Kakuro Amasaka
10:00-10:30	A3-3 A prediction market approach for collectively solving a shortest path problem Hajime Mizuyama and Ryosuke Ten	B3-3 An analysis of differences between "production" and "service" systems Ayako Kawai
10:30-10:50	Break	
10:50-11:50	Plenary Speech @Classroom 106 Research Issues in Operations Management for Semiconductor Manufacturers Kobe University　Prof. Hirofumi Matsuo	
12:00-13:30	Lunch @Porty (S1-5 University Hall, 3F)	
13:30-15:00	Plenary Speech @Classroom 106 Monozukuri: My Approach to Manufacturing Toyota Motor Corporation　Mr. Katsuaki Watanabe	
15:00-15:20	Break	
	Classroom 107	Classroom 105
	C4 Session: Mathematical Models for Supply Chain Chair: Takamichi Hosoda	B4 Session: Knowledge Management Chair: Brooke Saladin
15:20-15:50	C4-1 Supply chain wide performance under a wholesale price contract with a risk-averse retailer having a mean-standard deviation value function Shota Ohmura and Hirofumi Matsuo	B4-1 Emergency Recovery Production in the Japanese Automotive Industry: Lessons from the 1997 Aisin Seiki Kariya Factory Fire M. Carmen Perez
15:50-16:20	C4-2 Delay in market demand information Takamichi Hosoda and Stephen M. Disney	B4-2 Knowledge-based management in Vietnam: Evidence from case studies Nguyen Ngoc Thang and Phan Chi Anh
16:20-16:50	Break	
16:50-17:00	Closing Ceremony @Classroom 106	

JOMSA 第 3 回全国研究発表大会セッション・スケジュール

	JOMSA 第 3 回全国研究発表大会タイムテーブル 2011 年 6 月 18 日(土)		
9:00–9:40	開会式 106 講義室(経営学部講義棟 1 号館、N3–5)		
9:40–10:40	基調講演Ⅰ 106 講義室 Emerging Supply Chain Issues in the 2010s Indiana University Prof. Barbara B. Flynn		
10:40–11:00	休憩		
	204 講義室	205 講義室	206 講義室
	D1 セッション:自動車開発生産の展開 座長:青山学院大学 天坂 格郎	E1 セッション:サービス・オペレーションの高度化 座長:慶應義塾大学 増田 靖	F1 セッション:改善活動と環境 座長:駿河台大学 海老根 敦子
11:00–11:30	D1–1 自動車ボデーカラー開発ビジネスアプローチモデルの創案 青山学院大学 武藤 舞子、宮家亮太、天坂 格郎	E1–1 一様な顧客の優先度による混雑制御:テーマパークのサービス向上 慶應義塾大学 増田 靖 キヤノン 辻 暁	F1–1 経済モデルによる家電リサイクル法の有効性 首都大学東京 開沼 泰隆
11:30–12:00	D1–2 労働作業価値評価モデルの構築と有効性 青山学院大学 内田 和憲、角井将、天坂 格郎	E1–2 国際物流に関わるリスクマネジメントに関する研究 滋賀大学 大浦 啓輔 神戸大学 梶原 武久 日本通運 西健 太郎	F1–2 事例研究を通じた改善活動の活性状態に関する区分フレームワーク構築 慶應義塾大学 山口 淳、河野宏和
12:00–12:30	D1–3 開発設計に寄与する高信頼性 CAE 解析モデル構築の研究:自動車ボルト締結用高精度 CAE 解析アプローチ法の創案 青山学院大学 小崎 貴仁、山田宏樹、天坂 格郎	E1–3 コールセンターの組織能力が市場志向に及ぼす影響に関する研究 神戸大学 梶原武久 シャープ 溜池 生子	F1–3 IFM(相互作用する場のモデル)を用いた中小製造企業のコミュニケーション状態の研究 駿河台大学 海老根 敦子
12:30–14:00	昼休み		
14:00–15:00	基調講演Ⅱ 106 講義室 Japanese Manufacturing System 2011 – Its Capability and Challenges University of Tokyo Prof. Takahiro Fujimoto		
15:00–15:20	休憩		
15:20–16:50	106 講義室 A2 セッション チュートリアル・セッションＡ テーマ：サービス・イノベーション研究のフロンティア 司　会：神戸大学　伊藤 宗彦 ①リテール・イノベーション　－ＧＭＡＰ社のケース　神戸大学　南 知恵子 ②ＩＫＥＡのサービス・イノベーション　京都産業大学　森村 文一 ③神戸大学におけるサービス・イノベーション研究の総括　神戸大学　伊藤 宗彦		
17:00–17:50	2011 年度定期総会		
18:00–20:00	懇親会 於 Porty (大学会館 3 階、S1–5)		

	JOMSA 第 3 回全国研究発表大会タイムテーブル 2011 年 6 月 19 日(日)		
	204 講義室	205 講義室	206 講義室
	D3 セッション:生産システムの高度化 座長:筑波大学 倉田 久	E3 セッション:開発とマーケティング 座長:九州共立大学 磯野 誠	F3 セッション:協働と情報共有 座長:小樽商科大学 伊藤 一
9:00-9:30	D3-1 自動車駆動系オイルシール油漏れ高精度 CAE 解析 青山学院大学 野澤 保瑛、伊藤 貴裕、天坂 格郎	E3-1 自動車販売顧客来店率を高める“Mix Media Model”の研究:消費者購買行動モデル AIDA と統計科学の有効性 青山学院大学 小倉 基、八谷 剛幸、天坂 格郎	F3-1 鉄道車両開発プロジェクトにおける複数サプライヤーの協働 神戸大学 北林 孝顕
9:30-10:00	D3-2 新マレーシア生産モデル“NMPM”の創案 青山学院大学 黄 山、葉 有勝、天坂 格郎	E3-2 高品質保証 CAE 解析アプローチモデルの創案と有効性 ー自動車用ボルト締結部の座面応力解析を例としてー 青山学院大学 小野寺 雄大、天坂 格郎	F3-2 Development of Material Flow Cost Accounting in Japan Kobe University Katsuhiko Kokubu, Tomoaki Shimada, Aki Shinohara, and Hirotsugu Kitada
10:00-10:30	D3-3 ソフトウェア開発における顧客・ベンダー間の “情報共有達成度診断モデル”の構築に関する研究 青山学院大学 中村 将大、遠田 祐介、坂井 大剛、天坂 格郎	E3-3 Build to Think 志向:開発組織がデザインによるコンセプト洗練化を意図するとき 九州共立大学 磯野 誠	F3-3 BSC による病院経営改善の視点 —従業員満足調査を起点に— 小樽商科大学 伊藤 一 学習院大学 福地 純一郎
10:30-10:50	休憩		
10:50-11:50	基調講演Ⅲ 106 講義室 Research Issues in Operations Management for Semiconductor Manufacturers Kobe University Prof. Hirofumi Matsuo		
12:00-13:30	昼休み		
13:30-15:00	基調講演Ⅳ 106 講義室 私のものづくりのマネジメント トヨタ自動車株式会社副会長 渡辺捷昭氏		
15:00-15:20	休憩		
15:20-16:50	106 講義室 A4 セッション チュートリアル・セッションB テーマ:衆知を集めたオペレーションの高度化 総合司会:青山学院大学 天坂 格郎 司会進行:青山学院大学 水山 元 ①【商品企画】市場予測とソリューション 青山学院大学 水山 元 ②【開発設計】CAE 最適化設計法 青山学院大学 天坂 格郎 ③【開発生産準備】フロントローデングとマネジメント 富士ゼロックス株式会社 影山 敏一 ④【生産】生産と知的オペレーション キヤノン株式会社 中川 義之		
16:50-17:00	閉会式 106 講義室		

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Faculty of Business Administration, Yokohama National University
79-4 Tokiwadai, Hodogaya-ku, Yokohama 240-8501 Japan
Registration Desk is located in the entrance lobby of the Lecture Hall 1 Business (N3-5).

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The following are some of the most convenient routes available to reach Yokohama Station:

From Tokyo Station to Yokohama Station－30 minutes by JR Tokaido Line or Yokosuka Line
From Tokyo Narita Airport to Yokohama Station－90 minutes by JR Narita Express
From Tokyo Narita Airport to Yokohama City Air Terminal (YCAT)－120 minutes by Airport Limousine Bus
From Tokyo Haneda Airport to Yokohama Station－20 minutes by Keihinkyuko Line
From Tokyo Haneda Airport to Yokohama City Air Terminal (YCAT)－30 minutes by Keikyu Bus
*YCAT is located in the Yokohama Sky Building by the East Exit of Yokohama Station.

How to reach YNU from Yokohama Station

By Train
[Yokohama Municipal Subway] to the Main Entrance of YNU
The Nearest Station: [Yokohama Municipal Subway] Mitsuzawa-kamicho Station
About a 16 min. walk
[Sotetsu Line] to the South Gate and South Side Gate of YNU
The Nearest Station: [Sotetsu Line] Wadamachi Station
About a 20 min. walk

By Taxi
About 15 minutes from the West Exit of Yokohama Station. It costs around 1500 yen one way.

By Bus
15-20 minutes from the bus terminal at the West Exit of Yokohama Station. It costs 210 yen one way.

Yokohama Municipal Bus

Platform	Destination	Bus Stop Getting Off	Entrance to the University
11	Junkan- sotomawari: Route 202	Yokohama-shindo	South Side Gate
		Okazawa-cho	Main Entrance
14	Junkan-uchimawari: Route 201	Yokohama-shindo	South Side Gate
		Okazawa-cho	Main Entrance

Kanachu Bus

Platform	Destination	Bus Stop Getting Off	Entrance to the University
14	Nakayama-ekimae : Route 1	Yokohama-shindo	South Side Gate
		Okazawa-cho	Main Entrance

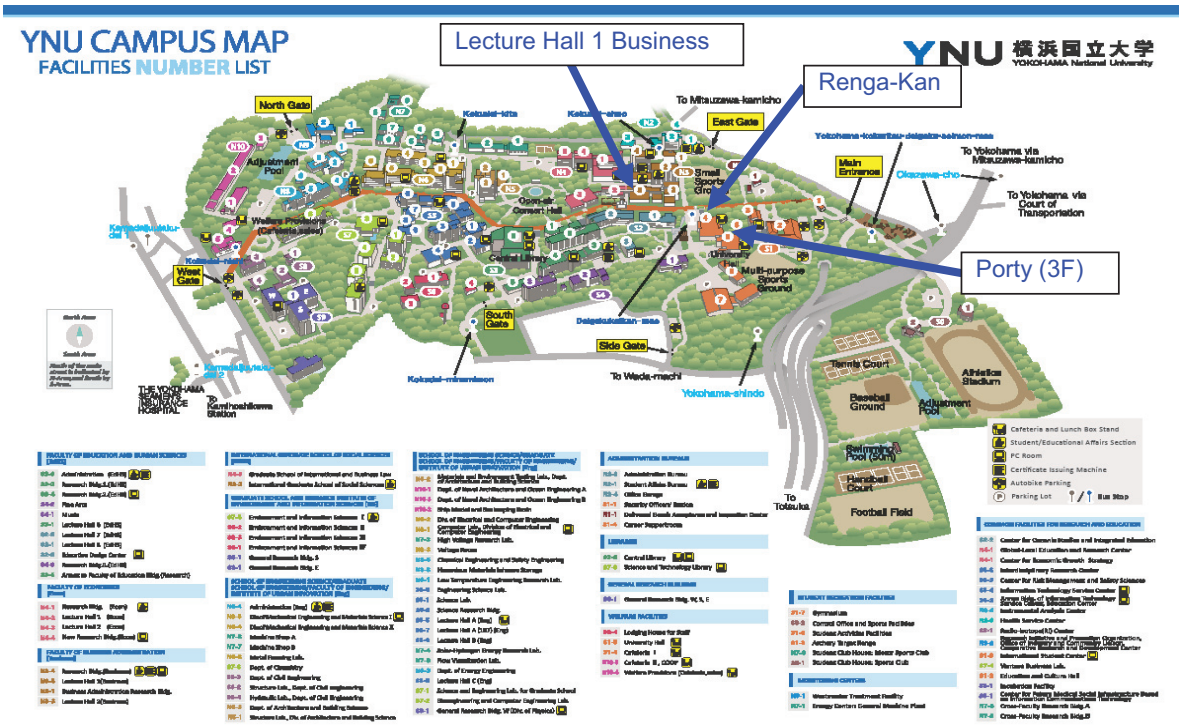
Sotetsu Bus

Platform	Destination	Bus Stop Getting Off	Entrance to the University
10	Yokohama-kokudai	Yokohama-kokudai	South Gate
10	Kotsu Saibansho Junkan	Okazawa-cho	Main Entrance
9	Kamadaijuutaku-dai 3	Kamadaijuutaku-dai 1	West Gate
9	Kamihoshikawa (via Kamadai)	Kamadaijuutaku-dai 1	West Gate

Campus Map

From the main gate of YNU to the Lecture Hall 1 Business (N3-5)

Enter the main gate, go straight 50 m, passing through the Security Officers' Station.
Turn left and go upstairs.
Go straight along the main street and cross a road.
Continue going straight along the main street 100 m.
Turn right and go upstairs a little.
You will find the entrance to the Lecture Hall 1 Business on your right.



Layout of Lecture Hall 1 Business

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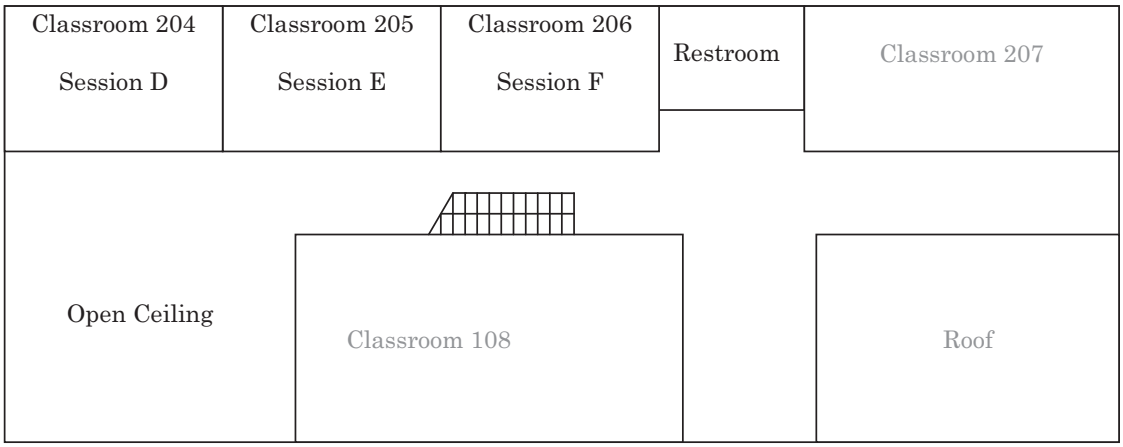

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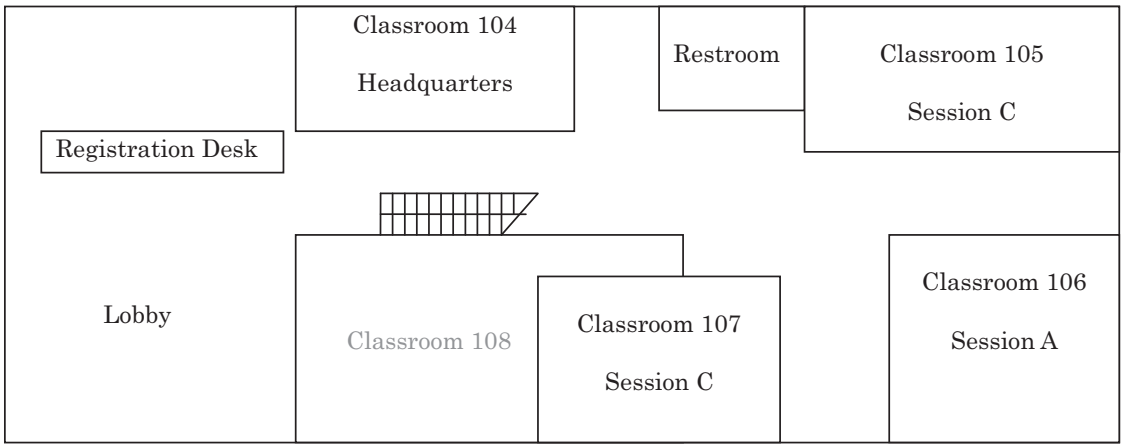

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Plenary Speeches

Classroom 106

Saturday, June 18, 2011, 9:40-10:40

Emerging Supply Chain Issues in the 2010s

Indiana University Prof. Barbara B. Flynn

As supply chains have become global, many new issues have emerged. In addition to presenting challenges to supply chain managers, these issues present exciting opportunities for cutting edge research. This presentation will focus on emerging opportunities for supply chain management research, including emergency response and humanitarian supply chains, supply chain quality and strategies for dealing with product recalls, green supply chains and developing and maintaining effective global supply chain relationships. Research questions will be posed and discussed in the context of emerging methodologies for empirical research.

Saturday, June 18, 2011, 14:00-15:00

Japanese Manufacturing System 2011 - Its Capability and Challenges

University of Tokyo Prof. Takahiro Fujimoto

Based on the framework of design-based comparative advantage, in which dynamic fit between organizational capabilities on manufacturing sites and architectures of products and processes affect competitiveness of the sites and industries, this presentation describes and analyzes various challenges of the Japanese manufacturing industry, including recessions, globalization, emerging economies, product complexity, and the earthquake.

Sunday, June 19, 2011, 10:50-11:50

Research Issues in Operations Management for Semiconductor Manufacturers

Kobe University Prof. Hirofumi Matsuo

The semiconductor manufacturing is uniquely characterized by the fast revolution of its basic technology, rapid and continual expansion of its global market, and extremely high fixed costs in facility, equipment and engineers. These fast moving and capital intensive nature requires a more integrative and flexible approach, and thus the development of a new manufacturing management paradigm different from the conventional Japanese "monozukuri" principle. In this talk, we shall review the industry structure and past OM research, and present new research agendas that the JOMSA research community need to address.

Sunday, June 19, 2011, 13:30-15:00

Monozukuri: My Approach to Manufacturing

Toyota Motor Corporation Mr. Katsuaki Watanabe

Manufacturing companies aim to delight customers by offering quality products at a reasonable price, thus fulfilling their mission of performing a valuable role in society, or, in a word, monozukuri. My presentation will cover trends in auto manufacturing as well as future prospects for the industry. In addition, I will introduce the system of plant management that I implemented during my years as General Manager of the Motomachi Plant. Further, during my service as Senior Managing Director, Executive Vice President, and President, to cope with a changing business environment of increasingly severe international competition, we promoted a four-in-one team approach with engineering, production engineering, purchasing, and suppliers to boost international competitiveness in cost and quality. I hope that you will find this information of some use in your current efforts.

Q&A Panel Session

Classroom 107

Saturday, June 18, 2011, 17:00-17:50

The distinguished professors at US business schools will take questions from delegates and discuss issues on research and study of operations management and strategy interactively.

Panelists:

Indiana University	Prof. Barbara B. Flynn
Indiana University	Prof. E. James Flynn
Wake Forest University	Prof. Brooke A. Saladin

チュートリアル・セッション

106講義室

A　サービス・イノベーション研究のフロンティア　6 月 18 日（土）15:20−16:50

司　会：神戸大学　伊藤　宗彦

①リテール・イノベーション　－GMAP社のケース	神戸大学　南　知惠子
②IKEAのサービス・イノベーション	京都産業大学　森村　文一
③神戸大学におけるサービス・イノベーション研究の総括	神戸大学　伊藤　宗彦

神戸大学では、多くのサービス・イノベーション事例を分析し、映像教材化している。そのうち、IKEA社、GMAP社という2つの事例研究成果を報告する。IKEA社の「ビジュアル・マーチャンダイジング」、GPAM社（UK）のGIS（地理情報システム）によるリテール・ソリューションサービスの事例である。いずれも、国際間にまたがるサービスの移転を果たしており、現在では、最先端のサービス・イノベーションの事例であろう。本報告では、神戸大学で制作したビデオにより、それぞれのサービスの現場に入りこみ、その本質を理解できる内容になっている。映像としてはいずれも、世界でも初めての公開となる。

B　衆知を集めたオペレーションの高度化　6 月 19 日（日）15:20−16:50

総合司会：青山学院大学　天坂　格郎

司会進行：青山学院大学　水山　元

①【商品企画】市場予測とソリューション	青山学院大学　水山　元
②【開発設計】CAE 最適化設計法	青山学院大学　天坂　格郎
③【開発生産準備】フロントローデングとマネジメント	富士ゼロックス株式会社　影山　敏一
④【生産】生産と知的オペレーション	キヤノン株式会社　中川　義之

集合知という概念が様々な分野で注目を集めている。オペレーションズ・マネジメントの分野では、これまで衆知を集めて活用することの重要性は十分に認識されてきた。特に、わが国の製造業は、全員参加、小集団活動、提案制度などの言葉にも表れているように、第一線の知識を活用することに熱心であったと言える。しかし、昨今、衆知の活用を取り巻く環境にも様々な変化が生じており、これまでと同じやり方を続けているだけでよいのか、という疑問も浮かんでくる。本チュートリアルでは、衆知を集めてオペレーションの高度化に活かす、オペレーションズ・マネジメントにおける集合知についてあらためて考えてみたい。

International Symposium on Operations Management and Strategy

Abstracts

■Saturday, June 18, 2011, 11:00 am - 12:30 pm

■A1 Session (Classroom 106): Supply Chain Modelling

Chair: Tsutomu Mishina (Akita Prefectural University)

A1-1 A Throughput-Maintaining Decision Strategy for a Production and Sales Simulation Game

Beiyu YANG, Yokohama National University
Motonari TANABU, Yokohama National University
Ryo SATO, Yokohama National University

Many models have been proposed to optimize inventory level and/or order quantity in supply chain management field. The models vary about purposes and assumptions. Some models take account of just a customer demand for the sake of simplicity and others deal with the financial aspect such as break-even point. These models usually assume the normally-distributed demand, however such models cannot be directly adapted to business simulation gaming which is repeatedly played by multiple human players. We propose a strategy called throughput management (THM) which maintains flow of goods in order to make a designated feasible profit level. The THM can be generally applied to business game which includes more than two business process such as production and sales. To examine the effectiveness of the THM, we apply the strategy to the Bakery Game which is a well-know business game in YBG (Yokohama Business Game) user community in Japan. Then, we compare the THM with the modified safety-stock management (SSM) through the numerical simulation using player-generated data set in the Bakery. The numerical simulation result shows that the THM is an effective evolutionarily stable strategy to counter with pricing and safety stock strategy.

Keywords: throughput management; safety stock management; business game

A1-2 How does uncertainty of customer's preference influence after-sales service decisions in a supply chain?

Hisashi Kurata, The University of Tsukuba

This research, as an extension of Kurata and Nam (2010), examines the effect of uncertainty on after-sales service decisions in a two-stage supply chain when both a retailer and a manufacturer offer after-sales service to customers. We proved that uncertainty may temporally alleviate the discrepancy between the customer's optimal service level and the firm's service decision based on profit-maximization but there is a risk that such accidental outperformance may mislead the firm to misunderstand incorrect after-sales service decision as a proper policy. We also present that a retailer's effort on efficient service operations will increase a possibility of accidental outperformance.

Keywords: After-sales service; Uncertainty effect; Supply chain management

A1-3 SYNTHESIZING DIFFERENT ASPECTS ON PUBLIC TRANSPORTATION BY USING A COMBINED AHP-DEA METHOD

Szabolcs Duleba, College of Nyiregyhaza
Harumi Miyano, Akita Prefectural University
Kei Ogiwara, Akita Prefectural University
Tsutomu Mishina, Akita Prefectural University

For every kind of service it can be stated that in many cases the supply side and the demand side have different image on quality and issues to be developed. Moreover, public services are even more complicated in that sense, because government side is also to be regarded. This paper aims to examine a possible way for synthesizing these aspects by Analytic Hierarchy Process (AHP) and Data Envelopment Analysis (DEA). The final result is a consensus, which may satisfy all main groups of participants in public transportation simultaneously.

Keywords: opinion synthesis; priority vectors; weight modification

■B1 Session (Classroom 105): Process Improvement

Chair: Phan Chi Anh (University of Economics and Business - Vietnam National University, Hanoi)

B1-1 The role of Shop Floor (Genba): Bridging Ex-ante and Ex-post Productivity
Nobuyuki Inamizu, Graduate School of Business Sciences, University of Tsukuba
Takahiro Fujimoto, Graduate School of Economics, the University of Tokyo
Mitsuhiro Fukuzawa, Manufacturing Management Research Center, the University of Tokyo
Nobutaka Suzuki, Manufacturing Management Research Center, the University of Tokyo

This study examines how a shop floor (Genba) adapts to severe environmental fluctuation and maintains the productivity, focusing on group leaders and Kaizen at automobile assembly plant of a Japanese OEM. Especially, we explore the relationship between the ex-ante and ex-post productivity and the role of the shop floor. The ex-ante productivity means the planned man-hours to manufacture the automobiles, and the ex-post productivity means the actual (realized) man-hours to manufacturing. The shop floor attempts to improve the ex-post productivity, quality and shorten the production lead time, given the ex-ante productivity. In this study, we focus on the process of some activities to improvement this ex-post productivity. In that process, group leaders who we observed are playing important role to maintain the operational availability. Group leaders, who are the most skillful workers in their line, are usually dedicated to Kaizen. This is a critical success factor of the Japanese assembly plant. The field observation and the time study of group leaders shows that the organization of this study adapted to severe environmental fluctuation by altering what the group leaders had to do. Especially, at the expense of their time for Kaizen, they moved around the shop floor and busily engaged in preventing the production line from stopping. Finally, we discuss whether short term adaptation enabled by remarkable organizational capability will be possible in the long term performance. And we suggest the role of shop floor (such as group leader and team leader) as the bridging device ex-ante and ex-post productivity.
Keywords: productivity; shop floor; group leader

B1-2 Shop-Floor Communication and Practices for Competitive Advantage: An Empirical Analysis of Quality Management
Jing Zeng, Yokohama National University
Phan Chi Anh, University of Economics and Business - Vietnam National University, Hanoi
Yoshiki Matsui, Yokohama National University

Even though the existing literature of quality management (QM) highlights the importance of communication and information management for the successful implementation of QM, there is a lack of empirical research dealing with the role of communication in supporting QM practices to obtain competitive advantage. This study proposes an analytical framework for examining the relationship among three types of shop-floor communication (Teamwork, Feedback, and Training) and three QM practices on shop floor level (Process Control, Preventive Maintenance, Cleanliness and Organization), and their effects on competitive performance. Data collected from 165 manufacturing plants in six industrialized regions are used to test hypothesized relationships by structural equation modeling with multiple regression analysis. The results show (1) shop-floor QM practices are closely linked to competitive performance, and (2) shop-floor communication facilitates shop-floor QM practices in achieving higher competitive advantage.
Keywords: quality management; shop-floor communication; empirical research

B1-3 EMPIRICAL STUDY ON TRANSFERABILITY OF KAIZEN PRACTICES
Phan Chi Anh, University of Economics and Business - Vietnam National University, Hanoi
Yoshiki Matsui, Yokohama National University

Kaizen is Japanese business strategy that calls for never ending effort for improvement involving everyone in the organization, from managers to workers. This study examines the influence of the national and organizational culture on the transferability of Kaizen in the manufacturing companies

in various developed countries. We adopted the approach initiated by House (2004) to examine such cultural dimensions as uncertainty avoidance, power distance, and collectivism. Statistical techniques are applied to the database collected through the questionnaire survey of 238 manufacturing plants in The US, Japan, Sweden, Germany, Italy, Finland, Australia, and Korea after 2003. The findings indicate that the implementation of such Kaizen practices as 5S, small problem solving, suggestion system, process control, and autonomous maintenance are significantly related to low power distance, low uncertainty avoidance, and collectivism. Our study suggests that the Kaizen implementation would be more successful in manufacturing plants having low centralization of authority and high cross-functional cooperation. In order to increase the chances for successful Kaizen adoption, two aspects of organizational culture are required: power delegation and empowerment, and high cooperation between managers, workers, customers, and suppliers. The great influence of the national culture and organizational culture on Kaizen practices detected in this study indicates that there is not a universal model for successful Kaizen transformation. Kaizen practices should be adapted to the local culture; in order have the highest probability of success.
Keywords: Kaizen Practices; Transferability; Manufacturing Plants

■Saturday, June 18, 2011, 3:20 pm - 4:50 pm

■B2 Session (Classroom 105): Capabilities and Values

Chair: E. James Flynn (Indiana University)

B2-1 An Experimental Measure of Operational Capabilities: an empirical study

Osam Sato, Tokyo Keizai University

Wu et al. (2010) defines operational capabilities of plants as firm specific sets of skills, processes, and routines, developed within the operations management system, that are regularly used in solving its problems through configuring its operational resources. The paper introduces a set of constructs, questions to measure them and validated them on the base of an empirical study.
We have related data that has been collected by a set of international survey conducted in early this century. Questions employed were different from those Wu et al. proposed. However, we find similar questions and data out of old dataset and reorganize these questions to make the constructs proposed by Wu et al., (2010). If we compare two questionnaires, that by Wu et al. (2010) is more concrete and ours is more conceptual. We studied our constructs and compared them to Wu et al. (2010). This gives us some suggestions about possibility of comparative constructs. We explain integrity of constructs, and difference found in our statistical study.
Keywords: operational capabilities; empirical study; measure instruments

B2-2 EFFECT OF WORK VALUES ON WORK OUTCOMES: FOCUSING ON PRODUCTION AND TECHNICAL WORKERS

Yutaka Ueda, Seikei University
Yoko Ohzono, Seikei University

This article explores basic work values dimensions and examines the effect of these work values on work outcomes, especially focusing on production and technical workers. The first study conducted an exploratory factor analysis of the data regarding 6,500 working persons in Japan and identified six different basic work values. The work values were found to vary by job categories, such that production workers tend to place relatively less significance on most work values, whereas technical workers emphasize the desirability of challenging jobs, power and authority, but place less value on identification with the organization. The second study found these work values influenced job outcomes, such as satisfaction, a sense of personal growth, and perceived skills. With both production and technical workers, a challenging job and identification with the organization positively influence most of the job outcomes, but extrinsic rewards have a negative impact on all of the work outcomes.

Keywords: work values; job satisfaction; production and technical workers

B2-3 Strategic Management Cycle and Dynamic Linkage of Business Processes
Michiya Morita, Gakushuin University
E. James Flynn, Indiana University
Shigemi Ochiai, Jonquil Consulting Inc.

The authors proposed the concept of strategic management cycle and confirmed the company tries to behave rationally by following the cycle. Furthermore, the authors showed competitive manufacturing companies maintain effective cycles where they perform high levels of those practices composing the cycle. The effective cycle forms a linkage of high levels of the practices. In other words, those practices' levels are positively correlated with each other. The strategic management cycle connotes dynamic adaptation of the company. If maintaining the cycle effectively, the company can be rewarded competitiveness over time. In this study, the authors explore into the construction mechanism of the effective cycle based on general management literature arguing good management. Also this study tries to combine operation management process with strategic management process under the concept of effective strategic management cycle. The effective strategic management cycle embraces the two management processes together. This is the concept of ambidexterity.
Keywords: management cycle; dynamic adaptation; dynamic capacity

■C2 Session (Classroom 107): Inventory and Sales Models

Chair: Peijun Guo (Yokohama National University)

C2-1 Inventory Control System based on Stochastic Diffusion Model
Masatoshi Tanaka, Matsumoto University
Naomichi Suzuki, Matsumoto University
Kijung Sung, Matsumoto University
Kazuhiro Kasai, Matsumoto University

H. Matsuo *et al.* examined the effects of diffusion on important classes of operation-planning decisions, which include production and inventory planning, technology planning and capacity planning. They apply Bass model to inventory control problem. Bass model depends on time. However, their inventory problem doesn't depend on time because of one-shot sale.
We have already formulated our stochastic diffusion model, which includes Bass model. Diffusion model can be applied to inventory control model.
In this paper we apply stochastic diffusion model to time-dependent inventory control problem. From constructing our model, we find out the optimal policies which imply optimal order quantity and optimal stopping time. We also illustrate numerical examples to show our model particularly.
Keywords: Inventory Control; Diffusion Model; Bass Model

C2-2 Innovation of Business and Sales Operation Employing TMS: Construction of Toyota Sales Marketing System
Kakuro Amasaka, Aoyama Gakuin University

The purpose of the "Total Marketing System, TMS" is to aid changes in marketing process management by correctly identifying customer demands, conducting proper business and sales activities and implementing "Customer Science" to contribute to merchandise development. As an example application study utilizing "Science SQC", the author established the "Toyota Sales Marketing System, TSMS", an intelligent customer information network system, to improve the repeat customer ratio for Toyota vehicles. The achievements of the present study are currently being applied at Netz Chiba and other Toyota dealers.
Keywords: Innovation of the Business and Sales Activities; Total Marketing System; Customer Science and Science DQC

C2-3 **Analyzing a Single-Period Inventory Problem with Regret One-Shot Decision Approaches**
Peijun Guo, Yokohama National University

The newsvendor problem, also known as newsboy or single-period problem is a common inventory problem. In general, the newsvendor problem has the following characteristics. Prior to the season, the buyer must decide the quantity of the goods to purchase/produce. The procurement lead-time tends to be quite long relative to the selling season so that often there is not enough opportunity to replenish inventory once the season has begun. Excess stock can only be salvaged at a loss once the season is over. Many extensions of the problem have been studied, such as problems with different objective and utility functions, supplier pricing policies and newsvendor pricing policies. Most of the extensions have been made in the probabilistic framework; i.e. the uncertainty of demand and supply is characterized by the probability distribution, and the objective function is expressed as maximizing the expected profit or probability measure of achieving a target profit. In this research, we consider a new product with a short life cycle. Because the product is new, there is no data available for forecasting the upcoming demand via statistical analysis. Since the life cycle of the product is short, how to determine the optimal order amount is a typical one-shot decision problem where a decision is experienced only once. Decision theories under uncertainty are theories of choice under uncertainty where the objects of choice are probability distributions (for Expected Utility Theory, Subjective Expected Utility and their varieties), or prospects framed in terms of gains and losses (for prospect theory), or possibility distributions (regarded as possibilistic lotteries). In fact, for one-shot decision problems, there is one and only one chance for only one state of nature occurring. In this research, the one-shot decision approaches with considering regret are proposed for dealing with such one-shot decision problems. The one-shot decision process comprises two steps. The first step is to identify which state of nature should be taken into account for each alternative based on a decision maker's different attitudes about possibility and regret. The identified states of nature are called regret focus points. Twelve kinds of regret focus points are proposed. The second step is to evaluate the alternatives to obtain the optimal alternative. The relationships between different kinds of regret focus points are analyzed. Newsvendor problem of a new product with a short life cycle is analyzed by the proposed regret one-shot decision approaches. The results of analysis show that the proposed decision models can provide useful insights in understanding different behaviors of decision makers and help the decision maker in finding out the best order quantities in accordance to his/her attitude about possibility and regret.
Keywords: Newsboy problem; one-shot decision; regret

■Sunday, June 19, 2011, 9:00 am - 10:30 am

■A3 Session (Classroom 106): Knowledge and Innovation

Chair: Hajime Mizuyama (Aoyama Gakuin University)

A3-1 **PROPOSAL AND EFFECTIVENESS OF A HIGHLY COMPELLING DIRECT MAIL METHOD "PMOS-DM": STRATEGIC APPLICATION OF STATISTICS AND MATHEMATICAL PROGRAMMING**
Hisatoshi Ishiguro, Aoyama Gakuin University
Itsumi Matsuo, Aoyama Gakuin University
Kakuro Amasaka, Aoyama Gakuin University

No clear processes are used at car dealers when deciding target customers for direct mail campaigns, and individual sales representatives rely on their experience when making such decisions. This means that dealer strategies lose their effectiveness and dealers fail to achieve the desired increase in customer visits. Thus, for this study, the author has established the "Practical Method using Optimization and Statistics for Direct Mail, PMOS-DM" as a method of deciding the most suitable target customers for direct mail campaigns. Specifically, in order to both clarify the dealer's target customer types and increase the number of customer visits, the author applied mathematical

programming (combinatorial optimization) using statistical science to establish a model for determining the most suitable target customers for direct mail campaigns. This model has subsequently been applied at company M dealers, demonstrating significant effectiveness in increasing customer visits.
Keywords: Marketing; Direct Mail; Numeric Simulation

A3-2 KNOWLEDGE-BASED MANAGEMENT IN VIETNAM:HOW TO APPLY TO ODA PROJECTS
NGUYEN ANH THU, University of Economics and Business - Vietnam National University, Hanoi
PHAN CHI ANH, University of Economics and Business - Vietnam National University, Hanoi

Knowledge-based management theory developed by Nonaka (1994) has been highly appreciated worldwide and proved to be an effective model for Asian countries. This theory provides an insight into the process to create knowledge in a firm or an organization. The theory, however, has not been thoroughly understood in Vietnam. Located in Asia, characterized by the same high-context culture as other Asian countries, Vietnam seems suitable for applying this knowledge-based management.
Although knowledge based management is mainly suggested for companies, its philosophy and ideas can be applied successfully in an organization or a project. However, the management frameworks of projects are different and the products of many projects are not specific compared to those of firms. This paper, therefore, studies the application of knowledge-based management theory to project management.
Some cases of successful ODA projects in Vietnam are analyzed in our study based on Nonaka's approach. Our study found that, the success of these projects rooted from the ability to enable the spiral of knowledge creation. All the stakeholders and related parties took their parts in this process. Particularly, the middle managers, with the middle-up-down management, played important role in promoting that knowledge-creating process. This management model has addressed some common shortcomings of many organizations in Vietnam, which is the lack of active and effective participation of members and the weakness of middle management. These findings contribute important evidences for further application of knowledge based management, not only to firms, but also to other organizations, and especially to ODA projects.
Keywords: Knowledge- based management; Project Management; Vietnam

A3-3 A prediction market approach for collectively solving a shortest path problem
Hajime Mizuyama, Aoyama Gakuin University
Ryosuke Ten, Kyoto University

Many decisions regarding operations management can be captured as a combinatorial optimization problem and, when the problem is well-structured, it can be handled by a suitable computerized algorithm. However, in a practical situation, it is often the case that the information required for clearly defining the problem is not fully available for a decision maker but is dispersed among multiple actors. This makes the problem ill-structured and difficult to be dealt with properly by the decision maker alone. Thus, this paper takes up a shortest path problem as an example of such a problem and proposes a prediction market approach for collectively solving it with a team of actors. The approach aggregates the dispersed information on the problem from the actors through the market mechanism. The paper discusses how to design the prediction security and market institution for this purpose. Further, it conducts laboratory experiments to investigate how the proposed approach actually works.
Keywords: collective intelligence; ill-structured problems; information aggregation

■B3 Session (Classroom 105): Business Models of Manufacturing and Services

Chair: Ayako Kawai (Takachiho University)

B3-1 **A Swarm of Medium-sized Enterprises Existing for a Long Time: Another "Galapagos Islands' phenomenon" turning up in Japan**

Taichi Kishimoto, Keiai University
Yasuyuki Kishi, The University of Tokyo
Shohei Hamamatsu, The University of Tokyo

Due to shrinking domestic demands, the rising value of yen, and overseas transfer of quantity production sites of large-sized enterprises, within the macro-environment of domestic manufacturing have been worse and worse year by year since the middle of 1980s. However, the amount of activity of domestic manufacturing did not shrink. The entire domestic shipment value maintained stable even though the tendency to increase ceased after the 1990s. A swarm of medium-sized enterprises persisting for a long time play a principal role in maintaining the economic activity. In fact, a number of medium-sized manufacturing enterprises maintained or extended domestic economic activity although Japanese economy faced environmental degradation of Japanese economy for 20 or 30 years. These medium-sized enterprises substitute for the overseas transfer of quantity production sites of large-sized enterprises, or the reduction and disappearance of economic activity of small-sized enterprises. The Japanese market is seen analogous to the "Galapagos Islands" because the Japanese market evolved in its own way under a severe environment, including the existence of very particular customers. Due to such a severe environment, the Japanese market evolved in an anomalous way. In reality, another "Galapagos Islands' phenomena" exists in the domestic economy. However, the situation of "medium-sized enterprises" is different from a situation of products. We found our results through utilizing macro data analysis. In this presentation, we will introduce the results of the data analysis. In addition, we present the academic and practical meaning of investigating such phenomenon. A medium-sized enterprises' version of the "Galapagos Islands' phenomenon" has the possibility to offer an interesting topic that may allow a breakthrough theory for Evolutional Enterprise Theory. On the other hand, resolution of this phenomenon provides practical guidelines for management executives to clear up their business assignments.
Keywords: a swarm of medium-sized enterprises; existing for a Long Time; macro data analysis

B3-2 **VISUALIZATION OF WORK PROCESSES OF SOFTWARE DEVELOPMENT - DEVELOPMENT OF A VISUALIZATION TOOL, "A-PPNS"-**

Hirotake Sakai, Aoyama Gakuin University
Kakuro Amasaka, Aoyama Gakuin University

Currently, knowledge within the field of software development is largely implicit and is not formally disseminated and shared. This means that there is little improvement and regeneration of processes, and knowledge gained from previous projects is not necessarily applied to new ones. In order to turn this situation around it is necessary to take an organized approach to sharing job-related information. For this study, the authors visualized work processes of software development and constructed "Amalab - Project Planning Navigation System, A-PPNS", a system for organizing accumulated knowledge related to the field of software development. More specifically, A-PPNS is a business process monitoring system and consists of the following four elements: (i) Optimized estimate support sub-system, (ii) Schedule monitoring system, (iii) QCD optimization diagnostic system, and (iv) Strategic technology accumulation system. The effectiveness of this system has been demonstrated and verified at Company A, a system integration company.
Keywords: work processes visualization; software estimation; "Amalab - Project Planning Navigation System, A-PPNS"

B3-3 **An analysis of differences between "production" and "service" systems**

Ayako Kawai, Takachiho University

"Service" must be one of the most important concepts for our next some decades. We, especially in developed countries, are in a transition period to service-driven economy. For the advanced era, we should develop methodologies including attractive tools for efficiency and effectiveness of service systems as we have in production industries. In production industries, many excellent management methodologies and engineering tools had been developed during past some decades. In production

industries, there are some essential lows or philosophies, for example six-sigma, kaizen, zero-defect, JIT, factory physics and so on. On the other hand, systematization of service industries is just getting started. At this stage, there are a lot of things what we can and must learn from production industries. However it is necessary to clarify structural differences between manufacturing systems and service systems to learn and apply. This research analyzes differences between manufacturing systems and service systems from data modeling point of views. Data model shows static structure of business processes. In addition, TH model, a data modeling method suggested by Tsubaki and Hotaka, can show state transition. In this research, we apply TH model for visualization of structural relationship of entities, so we consider that “state” is one of the key factors of service systems. By comparing input-output conceptual data model of manufacturing systems and service systems, differences between the two systems will be clarified.

Keywords: Manufacturing systems; Service systems; Structural differences

■Sunday, June 19, 2011, 3:20 pm - 4:20 pm

■B4 Session (Classroom 105): Knowledge Management

Chair: Brooke Saladin (Wake Forest University)

B4-1 Emergency Recovery Production in the Japanese Automotive Industry: Lessons from the 1997 Aisin Seiki Kariya Factory Fire

M. Carmen Perez, Yokohama National University

"1. Introduction, Research Gap and Central Research Question

The growing importance of globalization and the necessity of being competitive in costs in all industries made Japanese OEM`s still rely in long-term relation with their suppliers, in the pursuit of low cost, high quality, and quick delivery (Sheffi, 2005). However and although, incidents like natural disaster or accidents, for examples fires experiences, have demonstrated the risk of the dependence on few suppliers for specifics components, this long-term relation with suppliers made possible a fast and successful recovery of production successfully thanks to their close collaboration and efforts as happened in the case of 1997 Aisin Seiki Kariya Factory.

On February 1, 1997 a fire at Aisin´s Kariya plant number one threatened to halt Toyota-group operations for weeks. To improve efficiency and to pursue scale economy Aisin Seiki located all its P-valve manufacturing lines in this single factory, which were almost completely destroyed, along with special-purpose machinery and drills that could take a lot of time to order. It was nearly the only source for supplying P-valves, which was a crucial related part, used in almost all Toyota vehicles. Assembly plants were reopened after two days of shutdown. The recovery was possible because the immediate and largely effort by firms from within but also outside the Toyota group.

To date, others works (e.g. Nishiguchi & Beaudet; 1999, Kakihara & Sorensen, 2002; Lee, 1999) have studied on the case of a fire in 1997 at an Aisin Seiki plant making p-valves for brake systems and suggested that inventory planning and other operational aspects of lean or Just-In-Time supply chains make them have an inherent vulnerability to unexpected disasters. However, there are not studies which suggest what lessons could be learnt from the experience of the Aisin Seiki Kariya Factory fire in 1997.

This paper addresses the following research questions: What lessons could be learnt from the experience of the Aisin Seiki Kariya Factory fire in 1997? How much these lessons could be interesting for companies more than ten years after the incident?

2. Methodology, Empirical Data, Analysis

To see what lessons could be learnt from the experience of the Aisin Seiki Kariya Factory fire in 1997, this paper analyses what happened ten years later from the fire incident and which lessons could be learnt after experiment this incident. This analysis will be based on the data available in 1996, 1999, 2001, 2005 and 2008 Industry Research and Consulting (IRC) Reports on Production and Transactions of 200 Auto Components. Together, my colleagues and I conducted interviews at the Kariya Factory in March 2010 and February 2011.

3. Results and Contribution
This study complements past studies on supply chain collaboration in case of disaster relief focused on collaboration, trust, knowledge and capability sharing among companies through its findings about what lessons could be learnt from the experience of the Aisin Seiki Kariya Factory fire in 1997. Furthermore, it suggests how much these lessons could be useful more than ten years after the incident for Aisin Seiki and for other companies.
4. Bibliography
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Sheffi, Y. 2005. The resilient enterprise. Overcoming vulnerability for competitive advantage. The MIT Press, Boston, MA.| | |Nishiguchi, T. & Beaudet, A. 1998. The Toyota group and the Aisin fire. Sloan Management Review, 40(1):49-50.
Keywords: Emergency recovery production; Suppliers Chain; Learning from past experiences

B4-2 Knowledge-based management in Vietnam: Evidence from case studies
Nguyen Ngoc Thang, University of Economics and Business - Vietnam National University, Hanoi
Phan Chi Anh, University of Economics and Business - Vietnam National University, Hanoi

Explanations of economic growth in Vietnam have seldom focused on knowledge-based management as an important element in either the economic development of the country or with respect to knowledge-based management being an important element in firm competitiveness, although the link between knowledge-based management and firm performance is now recognized by most practicing managers as essential by most firms in developed economies, especially Japanese firms. Nonaka and his colleagues saw knowledge-based management as the key to the competitive of Japanese firms and Ba as the key element in achieving new knowledge (Nonaka, Toyama, and Hirata, 2008). In Vietnam, increased levels of global competition are already affecting the Vietnam companies. Labor-intensive manufacturing is disappearing from Japan, Hong Kong and South Korea. Managers in Vietnam are beginning to realize that they can no longer compete based on low labor costs and are starting to adopt sophisticated technological processes and knowledge-based management. The impetus for this manuscript relates to the need to investigate if the application of knowledge-based management diffused from Japan, Europe and North America holds in the Vietnam context, the degree to which local practices are being developed that may be more appropriate, and how the various forms of country variation effect the impact of various knowledge-based management on firm performance. We bring together three case studies - Sannam, Alphanam, and Gami - of innovation and knowledge-based management in Vietnam. Our goal are to make the research better know and to address aspects of innovation and knowledge-based management that represent best practices found to be linked with organizational performance. The research results show that companies, applying innovation strategies and knowledge-based management, are resulted in success in high performance and becoming major companies in Vietnam. We hope that readers will incorporate these aspects in their knowledge-based management practice, teaching and research.
Keywords: Vietnam; company performance; innovation

■C4 Session (Classroom 107): Mathematical Models for Supply Chain

Chair: Takamichi Hosoda (Aoyama Gakuin University)

C4-1 Supply chain wide performance under a wholesale price contract with a risk-averse retailer having a mean-standard deviation value function
Shota Ohmura, Kobe University
Hirofumi Matsuo, Kobe University

Tsay (2002) analyzes how the sensitivity to risk affects the relationships between a manufacturer and a retailer and how a return policy alters them for a wholesale price contract. The demand curve is assumed to be linear with an uncertain intercept. The retailer maximizes a mean-standard deviation (MS) value function instead of the expected profit. The MS value function represents a trade-off between the mean and standard deviation with the risk aversion parameter k. In this paper, we focus on the wholesale price contract without return policy where the manufacturer is the Stackelberg leader and the retailer is risk averse.
Tsay (2002) derives an equilibrium for the wholesale price contract without return policy. Using the backward induction method, we show that there actually exist three types of equilibrium under the wholesale price contract, especially for the case of retailer with high risk aversion (i.e. the risk aversion parameter k that is greater than a certain threshold value). Depending of the equilibrium type or equivalently the degree of retailer's risk aversion, the change of wholesale price affects differently the manufacturer's expected profit and the supply chain wide expected profit. Our analysis implies that, in some high risk-averse retailer case, the manufacturer might consider reducing the wholesale price to induce a disproportionately greater order size by the risk-averse retailer and supply chain wide expected profit.
Keywords: supply chain management; wholesale price contract; risk aversion

C4-2 Delay in market demand information

Takamichi Hosoda, Aoyama Gakuin University
Stephen M. Disney, Cardiff University

Generally the importance of the availability of the real-time information in a supply chain has been well known. Johnson and Mena (2008) argue, for instance, that the management of the information flow by using real-time data is a key factor for supply chain success. Therefore, sometimes obtaining real-time information and sharing it among players in a supply chain can be the major purpose of the project for implementing supply chain planning systems (Kelle and Akbulut, 2005). A simple but fundamental question is: “Is obtaining real-time information the only strategy to overcome the time lag in the information flow in a supply chain?” We agree that eliminating time lags as much as possible (by introducing information technologies, for example) would be a strategy to be considered by a supply chain redesign. We call this strategy the Time lag Elimination Strategy (TES). However, this course of action may require certain amount of investment for the introduction of information systems in addition to a running cost of the system. We propose an alternative strategy that will not require large amount of investment or a running cost but can improve supply chain performance as much as TES can. This strategy is called the Controlling Dynamics Strategy (CDS) herein. We show that TES is beneficial, especially for the reduction of the inventory cost, and CDS can reduce the production cost significantly. Doing both results in the lower cost. This suggests that if the major concern of the supply chain is reducing its inventory cost, TES should be exploited, and if it is its production cost, CDS is recommended. In terms of the total cost, both strategies have shown the similar performance. From a practical point of view, there might be significant differences between these two strategies. To complete the TES, the supply chain may need to make a large investment in information systems (such as RFID), and incur a running cost. On the other hand, CDS only needs to modify the value of F used within the OUT policy, and no new hardware or software is necessary. The running cost for CDS might also be negligible. Therefore, the return on investment may be higher for CDS than for TES. A new ordering policy is introduced that is easy to implement without any forecasting systems and can reduce the production cost significantly. It is called the HD policy and is a very attractive alternative when the production cost is the major concern to a supply chain. Its cost performance and its ease of implementation would be attractive for many manufacturers.
Keywords: supply chain management; information delay

JOMSA 第3回全国研究発表大会

Abstracts

■2011 年6月 18 日（土） 11:00 am - 12:30 pm

■D1 セッション (204 講義室): 自動車開発生産の展開

座長: 天坂 格郎（青山学院大学）

D1-1 自動車ボデーカラー開発ビジネスアプローチモデルの創案

武藤 舞子（青山学院大学）
宮家 亮太（青山学院大学）
天坂 格郎（青山学院大学）

本研究では，統計科学を援用する “Customer Science Application System, CS-CIANS”を戦略的に適用する “Automobile Body Color Development Approach Model” を創案する．具体的には，まず(1)顧客の要求品質実現の成功要因の“可視化”を行う．次に，(2)顧客の価値観を根底におき，自動車外観デザインとボデーカラー開発に関わる部門の“考え方や方向性”を一致させるビジネスアプローチを得るための“指標化”を行う．さらに，それらの(1)“成功要因”と(2)“指標”をリンケージさせる．そして筆者らは，創案できた本モデルをA社の自動車ボデーカラー開発に適用し，本モデルの有効性を検証する．

Keywords: 自動車ボデーカラー、ビジネスアプローチモデル、統計科学

D1-2 労働作業価値評価モデルの構築と有効性

内田 和憲（青山学院大学）
角井 将（青山学院大学）
天坂 格郎（青山学院大学）

QCD に優れた製品を実現するためには，現場ワーカーの仕事の質を高め，“労働作業の価値”を向上させることが最重要課題となっている．本研究では，新たな視点で“労働作業価値”を高めることの重要性を捉え，それら輻輳する要素の関係性を把握した．そして，それらの知見をもとに，統計科学を援用し“労働作業価値評価モデル式”を創案した．このモデル式は，疲労低減，疾病防止，快適性，知力・能力，組織・役割のコアモデルで構成している．そこで論者らは，本モデルの有効性について主要企業で検証した．

Keywords: 労働作業価値、労働環境評価モデル式、製造業

D1-3 開発設計に寄与する高信頼性 CAE 解析モデル構築の研究：自動車ボルト締結用高精度 CAE 解析アプローチ法の創案

小崎 貴仁（青山学院大学）
山田 宏樹（青山学院大学）
天坂 格郎（青山学院大学）

近年論者らは，従前の開発設計プロセスに見られる試作と実機実験を試行錯誤的に繰り返す”現物確認改善型”から“予測評価重視型”への転換を図り，開発期間の短縮と QCD 同時達成に寄与する“高信頼性 CAE 解析モデル”の構築を進めている．具体例として，近年論者らは，自動車用ボルト締結緩みの高精度 CAE 解析シミュレータの開発を進めている．本研究では，継続的課題となっている自動車用締結ボルトの“緩みメカニズム”を解明し，その知見を反映した“高精度 CAE 解析アプローチ法”を創案する．具体的には，まず(1)開発設計のビジネスプロセス刷新のための CAE 適用課題を抽出した．つぎに，得られた知見をもとに(2)“高信頼性 CAE 解析ソフトの技術要素モデル（問題 － 理論 － アルゴリズム-モデル － 計算機技術）を創案し，さらに(3)ボルト締結部の応力解析に着目し，実機実験と CAE 解析に乖離がない”自動車ボルト締結用高精度 CAE 解析アプローチ法“（可視化―メカニズム解明―2 次元 CAE 解析―3 次元 CAE 解析―最適化設計）を創案し，所与の成果を得た．

Keywords: 高精度 CAE 解析アプローチ法、自動車用締結ボルト、緩みメカニズム

■E1 セッション (205 講義室): サービス・オペレーションの高度化

座長: 増田 靖(慶應義塾大学)

E1-1 一様な顧客の優先度による混雑制御:テーマパークのサービス向上
増田 靖(慶應義塾大学)
辻 暁(キヤノン)

本研究は、テーマパークにおいて優先パスが顧客全体の効用に与える影響を明らかにする。優先度による混雑制御は、非一様な顧客を対象としたときに有効であることが知られている。客の時間に対する機会費用を c、サービス要求量を $1/\mu$ としたとき、$c\mu$ の大きい順に優先度を割り当てると、全体最適化が図られることが、ある種の待ち行列システムに対して知られている。常識的には、顧客が完全に一様の時には、優先度付与が顧客全体の厚生に影響を与えるとは考えにくい。ところが、さまざまなアトラクションがあるテーマパークにおいては、過混雑しているアトラクションにおいて優先パスを発行することにより、そのアトラクションへの均衡到着率を減らすことができる。具体的には、優先パスなしの基本均衡モデルと、2つのタイプの優先パスの均衡モデルを考え、顧客サービス向上を図るための優先パス発行のアルゴリズムを提案する。
Keywords: 混雑制御、テーマパーク、優先パス

E1-2 国際物流に関わるリスクマネジメントに関する研究
大浦 啓輔(滋賀大学)
梶原 武久(神戸大学)
西健 太郎(日本通運)

本研究では、製造企業を対象に収集したサーベイデータを使用しながら、国際物流業務や取引の特性が荷主の物流業者に対して行うリスクマネジメントにどのような影響を及ぼすかについて検討を行った。国際物流業務は多大な資源や専門性が必要であるため、多くの企業が、物流業者に対して外部委託を行っている。しかし国際物流には様々なリスクが伴うため、荷主企業は物流企業に対して適切なコントロール活動を行わなければならない。本研究では、取引コスト理論、マネジメントコントロール、リスクマネジメント領域の先攻研究を参照しながら、荷主の物流業者に対するリスクマネジメント手段として、(1)事前契約、(2)取引中のモニタリング、(3)事後対応という3つを認識した上で、国際物流に伴う不確実性、国際物流の戦略的重要性、貨物特性、取引の集中度等の要因が、3つのリスクマネジメント手段に及ぼす影響について理論的な検討を行った上で、サーベイデータによる検証を行った。
Keywords: 国際物流、リスクマネジメント、サーベイリサーチ

E1-3 コールセンターの組織能力が市場志向に及ぼす影響に関する研究
梶原 武久(神戸大学)
溜池 生子(シャープ)

本報告では, 消費者関連専門者会議 ACAP の協力を得て会員企業を対象として収集したサーベイデータに基づき, コールセンター能力が他部門で行われる意思決定や組織の市場志向性に及ぼす影響に関する分析結果の報告を行う。まず先行研究およびヒヤリング調査の結果に基づき、コールセンター能力として「革新能力」「リスク感知力」「コミュニケーション能力」という3つの能力を認識した上で、これらの3つの能力により、リスク削減に関する意思決定と戦略に関わる意思決定に対するコールセンターの関与度が高まり、その結果、組織の市場志向が高まるというモデルを構築した。次いで、ACAP 会員企業から収集したデータにより、本モデルの検証を行った。分析結果、3つの能力が組織の市場志向を高める上で一定の役割を有していることが明らかとなった。
Keywords: コールセンター、市場志向、組織能力

■F1 セッション (206 講義室): 改善活動と環境

座長: 海老根 敦子(駿河台大学)

F1-1 経済モデルによる家電リサイクル法の有効性

開沼 泰隆(首都大学東京)

これまで日本では大量生産, 大量消費, 大量廃棄型の経済社会を形成してきたが, その結果として廃棄物からの有害物質の流出や資源の枯渇などの環境問題を引き起こしている. これらの問題に対応して持続可能な循環型社会を形成するために, 循環型社会形成推進基本法や家電リサイクル法等が施行されてきた. さらに世界的に拡大生産者責任の概念の広まりにより, 企業は製品が耐久使用年数を迎えてから回収・リサイクルするまで責任を持つことが強く求められるようになってきた. 本研究では, 家電リサイクル法の仕組みやその取組み状況を海外と比較・評価し, 廃家電製品のリサイクルに関する現状データから, 経済モデルを用いて日本の制度の在り方に関して改善すべき点についての検討を行った. さらに今後のシナリオを分類し, 現行の家電リサイクル法の改善策の比較を行うことによって, 環境重視型, 消費者重視型, 製造者重視型などのシナリオについて検討を行った.

Keywords: 家電リサイクル法、拡大生産者責任、経済モデル

F1-2 事例研究を通じた改善活動の活性状態に関する区分フレームワーク構築

山口 淳(慶應義塾大学)
河野 宏和(慶應義塾大学)

製造企業における改善活動の重要性は従来から多数指摘されているが、改善活動を継続することは難しく、継続に有効なマネジメントに関する研究もまだ充分体系化されているとは言えない。本研究では、”改善活動の継続”がどのような状態を意味するかを明らかにするための基盤として、改善活動の活性状態を区分するためのフレームワークの構築を行なっている。具体的には、改善活動の活性度が変化した 18 の事例文献を対象とした詳細な分析を通じて、改善活動の活性状態を把握するためのフレームワークを構築し、活性状態が8つのタイプに区分できることを見出している。その上で、事例ごとに、活性状態がどのように推移したか、およびそれら推移の背景にはどのようなマネジメント活動があったかを抽出し、それらの分析結果から、活性状態の推移と推移の原因について類型化を行ない、改善活動継続のために目指すべき活性状態について考察を行なっている。

Keywords: 改善活動、改善活動継続のマネジメント、改善活動の状態区分

F1-3 IFM(相互作用する場のモデル)を用いた中小製造企業のコミュニケーション状態の研究

海老根 敦子(駿河台大学)

中小規模の製造企業の品質創造活動に企業内コミュニケーションが果たす役割を探究する目的で, 埼玉県西部地域所在の中小製造企業 11 社を対象に, 企業内コミュニケーションと品質力に関するアンケート調査を2年にわたり実施した. 企業組織内のより良いコミュニケーション, すなわち, 業務上の理解共有が品質競争力の向上に寄与するという知見はすでに大規模製造企業の調査である程度得られているが, 中小製造企業ではどのような調査指標に注目すべきかが未確定なので, IFM(相互作用する場のモデル)のコミュニケーションの素過程の受発信水準を測定し, コミュニケーション状態ベクトルを定義した. さらに, コミュニケーション状態ベクトルの差に注目し, 集団内の素状態差ベクトルの度数分布のパターンの差が中小製造企業の品質経営状態の差を敏感に反映しているのではないかと考え, 3つの典型例についてコミュニケーション状態の特徴を考究した.

Keywords: 相互作用する場のモデル IFM (Interacting Field Model)、中小製造企業、組織内コミュニケーション状態

■2011 年6月 19 日（日） 9:00 am – 10:30 pm

■D3 セッション (204 講義室): 生産システムの高度化

座長: 倉田 久（筑波大学）

D3-1 自動車駆動系オイルシール油漏れ高精度 CAE 解析

野澤 保瑛（青山学院大学）
伊藤 貴裕（青山学院大学）
天坂 格郎（青山学院大学）

本研究では，技術メカニズムが不明な問題に対し，不具合発生の技術メカニズムを解明し，CAE シミュレーションに落とし込むことで予測評価重視型の開発設計実現を目指す．具体的には，駆動系オイルシール油漏れ問題をとりあげ，現象把握—可視化実験—論理思考—CAE 解析のプロセスによって設計へ寄与することを目的とする．CAE を活用した研究事例として予測評価重視型の開発設計実現への貢献度は大きい．

Keywords: オイルシール CAE、油漏れ問題

D3-2 新マレーシア生産モデル“NMPM”の創案

黄 山（青山学院大学）
葉 有勝（青山学院大学）
天坂 格郎（青山学院大学）

現今マレーシア自動車産業は，グローバル化を志向した生産量の拡大と共に“世界品質競争”に勝ち抜くための生産戦略として，品質マネジメント，生産マネジメント，人材マネジメント，海外自動車メーカーなどの戦略的連携など，新たな課題の克服が求められている．そこで論者らは，日本的生産方式を代表する“トヨタ生産方式”(TPS)と，現在の“マレーシア生産方式”(MPS)を新たな視点で統合化する“New Malaysia Production Model, NMPM”を創案する．

Keywords: 自動車、グローバル化、New Malaysia Production Model

D3-3 ソフトウェア開発における顧客・ベンダー間の“情報共有達成度診断モデル”の構築に関する研究

中村 将大（青山学院大学）
遠田 祐介（青山学院大学）
坂井 大剛（青山学院大学）
天坂 格郎（青山学院大学）

論者らは，ソフトウェア開発における個々の開発プロジェクトに対し顧客・ベンダー間の情報共有達成度を定量的に評価を行う，新たな“情報共有達成度診断モデル”を構築し，これにより達成度の低い項目の改善策を提示することを可能にした．具体的には，統計科学手法を援用し，情報共有達成に必要な要因から総合達成度への影響度を算出する数理モデルを導出し，当該モデルのソフトウェア化を図った．そして，論者らは，構築できた本診断モデルを国内ベンダー3 社に適用し，その有効性を検証した．

Keywords: 情報共有、ソフトウェア開発、統計科学

■E3 セッション (205 講義室): 開発とマーケティング

座長: 磯野 誠(九州共立大学)

E3-1 自動車販売顧客来店率を高める"Mix Media Model"の研究:消費者購買行動モデル AIDA と統計科学の有効性

小倉 基(青山学院大学)
八谷 剛幸(青山学院大学)
天坂 格郎(青山学院大学)

本研究では,"自動車販売店への来店率"を高める"Mix Media Model"(テレビ・新聞・チラシ,ダイレクトメール,交通広告・インターネットなどの広告効果)について,消費者行動モデル"AIDA理論"(Attention-Interest-Desire-Action)と統計科学と援用し,定量的に把握する.具体的に論者らは,自動車メーカーT社と代表的な販売店において本モデルを適用し有効性を検証する.

Keywords: 自動車広告、AIDA 理論、MixMediaModel

E3-2 高品質保証 CAE 解析アプローチモデルの創案と有効性 ー自動車用ボルト締結部の座面応力解析を例としてー

小野寺 雄大(青山学院大学)
天坂 格郎(青山学院大学)

本研究では,開発設計者のビジネスプロセスを刷新する"高品質保証 CAE 解析アプローチモデル"を創案する.本モデルの狙いは,従前の実機実験に頼る"現物確認改善型"から"実機実験値"と乖離の無い"高精度 CAE 解析"による"予測評価重視型"への変革である.本モデルでは,"課題設定ー実機実験ー可視化ーCAE 解析技術要素モデルー2 次元 CAE 解析ー3 次元 CAE 解析ー予測と評価ー最適化設計ー検証"のステップフローで構成している.具体例として,論者らは自動車メーカーの継続課題である"ボルト締結の緩み"に着目し,ボルト締結部の座面応力解析により"緩みのメカニズム解明"に新知見を得ており,本モデルの有効性を検証した.

Keywords: CAE、高品質保証、ボルト締結

E3-3 Build to Think 志向:開発組織がデザインによるコンセプト洗練化を意図するとき

磯野 誠(九州共立大学)

デザインの新製品開発における役割のひとつとして、Cagan & Vogel(2002)等によっては、デザインがコンセプト自体の洗練化を促すことが指摘されてきた(Build to Think と呼ぶ)。一方、Cooper (1994)等一般的な新製品開発研究においては、デザイン、あるいはコンセプトの視覚化といった活動は、顧客魅力が確認されたコンセプトを定義した後に行うことが主張されてきた(Build After Thought と呼ぶ)。開発組織がそのような Build to Think を志向する起因となるものとは何か。

上場企業等のマーケター・デザイナー計93人から得られた回答をもとに重回帰分析を実施、次の知見を導いた。開発組織が Build to Think モデルを志向することは、より活発なチームワーキング、デザイナーの創造性志向性、開発コンセプトの方向性、に起因し、Build After Thought により阻害される。開発組織は自社が活用可能な資源、開発しようとする製品コンセプトをもとに、Build to Think モデル、Build After Thought モデル、のどちらを志向するのかを明確にする必要がある。

Keywords: 新製品開発、コンセプト、デザイン

■F3 セッション (206 講義室): 協働と情報共有

座長: 伊藤 一(小樽商科大学)

F3-1 鉄道車両開発プロジェクトにおける複数サプライヤーの協働

北林 孝顕(神戸大学)

本報告では, 鉄道車両開発プロジェクトにおけるサプライヤー間の連携について実施した定性的研究の結果を報告する。鉄道車両開発は鉄道事業者によって計画されるが, 実際の開発・設計業務は, サプライヤーである鉄道車両メーカーによって実施される。また, 鉄道車両開発は, 競合関係にある複数のサプライヤーの協働によって実施されることも少なくない。本研究では, 鉄道車両メーカーの開発担当者に対するインタビュー調査に基づき, 競合関係にある複数のサプライヤーによる共同開発がどのようなプロセスで行われるのか, また, サプライヤー間の効果的な連携の促進要因や阻害要因は何か, について分析を行った。その結果, 信頼がサプライヤー間の協調性を高めること, その信頼形成の背景には鉄道事業者も含めた 3 社間の長期的なパートナーシップの形成があることが示唆された。

Keywords: サプライヤー間の協働、鉄道車両開発、信頼

F3-2 Development of Material Flow Cost Accounting in Japan

Katsuhiko Kokubu, Kobe University
Tomoaki Shimada, Kobe University
Aki Shinohara, Kobe University
Hirotsugu Kitada, Kobe University

Material flow cost accounting (MFCA) is being highly evaluated and rapidly disseminated as a powerful management tool to simultaneously reduce environmental impacts and material costs in Japan. The ISO TC (technical committee) 207 is also preparing the standard of MFCA as ISO 14051, which will be published in 2011. This project has been headed by the first author. In this study, we conducted action research on implementation of MFCA in three Japanese manufacturers. The main products of these companies are electrical equipment, chemical products, and car components, respectively. Our analysis indicates that successful implementation of MFCA depends on top management support, information sharing of material flows, and emphasis on long-term values.

Keywords: Material Flow Cost Accounting; Environmental Management; Material Efficiency

F3-3 BSC による病院経営改善の視点 —従業員満足調査を起点に—

伊藤 一(小樽商科大学)
福地 純一郎(学習院大学)

北海道済生会小樽病院にて5年間(2008－2011)に及ぶ BSC 手法を利用した経営改善活動を取り上げ、病院を対象とした経営改善活動における問題点を考察した。職員満足度調査における病院・組織への帰属意識の状況を確認し、BSC の設計を年次ごとに変更しより充実した戦略マップの策定を行った。さらに院内での経営改善のために QC 手法の教育、QC 活動のフォローと報告会の実施、感染症マニュアル策定におけるワークアウト手法の導入、薬剤共同購買、顧客満足度活動などにより、院内の業績改善が実現した。調査の結果、業務改善運動において個別オペレーション活動と中心戦略との連携が最も重要であり、対象病院において、戦略リーダー制によるファシリテーション活動の成功が特筆されるべき内容であった。特に“場の設定スキル”、“対人関係スキル”、“構造化スキル”、“合意形成プロセス”などの円滑な導入の成果であったことが判明した。

Keywords: BSC、サービスオペレーション、医療機関

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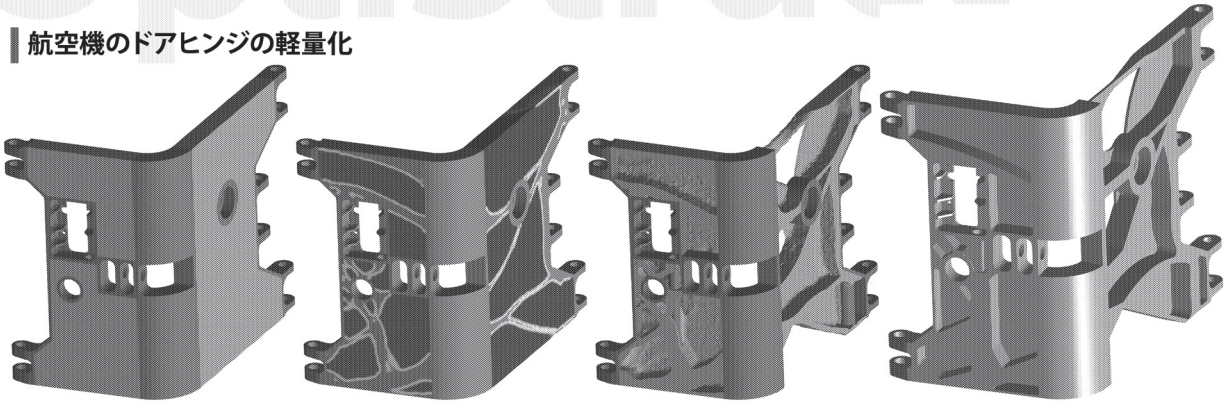

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この度の東日本大震災により被災されたすべての皆様に、謹んでお見舞い申し上げますとともに、一日も早い復旧を心よりお祈りいたします。

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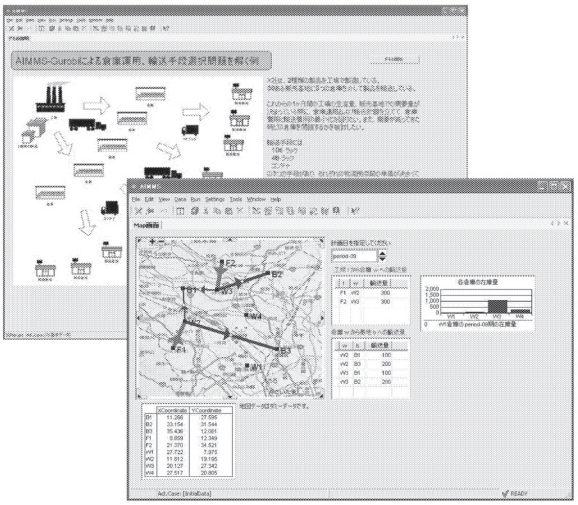
アルテアエンジニアリング株式会社　www.altairjp.co.jp
東京都豊島区東池袋 3-1-1 サンシャイン 60 43 階　Phone: 03-5396-1341　marketing@altairjp.co.jp

最新の最適化技術が支える
災害に強い物流システム構築に向けて

このたびの東日本大震災において亡くなられた方々に、心より哀悼の意を表しますとともに、被害を受けられた多くの皆様に心よりお見舞いを申し上げます。

今回の大災害におきましては、被災地の企業はもとより、物流ネットワークの寸断や部品・材料調達障害により日本そして世界中の製造業の SCM に多大なる影響を与えました。災害発生時には、新たなる部品・材料調達、新たなる物流拠点の設置、物流ネットワークの再設計など、一度の沢山のシミュレーションを行い、可能な限り最適な生産・物流環境を短時間に構築する必要があります。弊社では、最適化技術を活用し、災害発生時に即座に対応できる物流システム構築のお手伝いをさせていただきます。



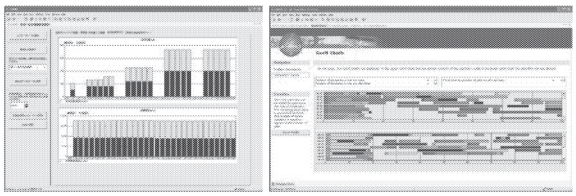
Gurobi Optimizer
次元を超えた最適化リーダーの更なる飛躍

今まで、大規模な問題、複雑な問題で、数々の最適化ソフトウェアを試してみたが、解を得るのに時間がかかる、また、解を得られなかったあなたに朗報です。第三者機関が実施したベンチマークサイトで、世界最高速をたたき出した Gurobi Optimizer の新バージョン 4.5 がリリースされました。バージョン 4.5 では更なる高速性を追求しています。Gurobi Optimizer は、線形（LP）および混合整数計画 (MIP) における世界的第一人者である Robert Bixby 博士率いる米国 Gurobi Optimization Inc. の製品です。最新の革新的技術を取り入れた超高速最適化ソルバーである Gurobi Optimizer は、二次計画 (QP）および混合整数二次計画 (MIQP) もサポートしています。

Gurobi Optimizer は米国 Gurobi Optimization Inc. の開発製品です。

応用開発モデリングツール AIMMS
スムーズな開発を支援

AIMMS は、オペレーションズ リサーチを基盤にする最適化アプリケーションおよびプランニング アプリケーション構築のための応用開発環境を提供します。AIMMS は、サプライチェーン マネジメント（SCM）、生産計画、ロジスティックス、植林計画、リスク管理、収益管理、資産管理などの幅広い産業分野において、ワールドワイドで活躍するリーディング カンパニーの意思決定支援のため、広く採用されています。



AIMMS はオランダ Paragon Decision Technology B.V. の開発製品です。
AIMMS はオランダ Paragon Decision Technology B.V. の登録商標です。

Gurobi Optimizer/AIMMS/AMPL 製品無償トレーニング
オクトーバー・スカイでは、ご購入を検討されているお客様を対象に、半日ハンズオン・トレーニングを実施しています。トレーニングに関しては、下記 Web サイトを参照してください。
URL: http://www.octobersky.jp/support/training.html
お問い合わせ： info@octobersky.jp

<お問い合わせ先>

株式会社オクトーバー・スカイ
〒183-0056 東京都府中市寿町 1-8-1 寿町 KY ビル 3F
TEL : 042-207-3020 / FAX : 042-207-3022
URL : http://www.octobersky.jp　E-mail : info@octobersky.jp

SI/EMC対応のイノベーションを
お客様と一緒に実現します。

Zuken SI/EMC Consulting

■技術トレーニング
- ●IBISモデルトレーニング
- ●ノイズ対策技術トレーニング
- ●ツール運用トレーニング
- ●SI/EMC基礎トレーニング

■デザインサービス
- ●解析サービス
- ●IBISモデル作成サービス
- ●SI設計サービス
- ●EMC設計サービス

■デザインコンサルティング
- ●IBISモデル作成コンサルティング
- ●SI設計コンサルティング
  - ・フロアプラン
  - ・SI評価
- ●ツール運用コンサルティング

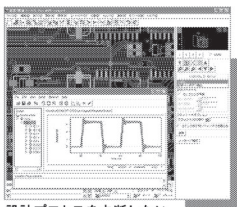
■チームデザイン

■設計環境構築コンサルティング

EDA統合ソリューション
CR-5000

●世界トップクラスのCAD/CAM技術
30年以上の実績。最新の基板技術、実装技術に常に対応。

●SI/EMCシミュレーション技術
20年以上のシミュレータ開発の実績。



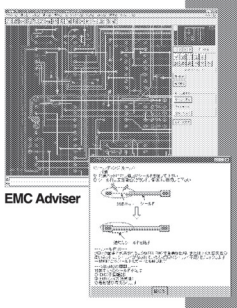
設計プロセスを中断しない
ダイレクトな解析

回路設計 → フロアプラン（基板構想設計 SI/EMC解析） → 基板設計（配置・配線 アートワーク） → ルールチェック → 解析（SI解析 EMC解析）

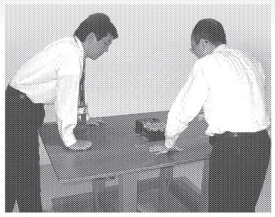
デザインインフラ/システム

ルールをシステムに統合 → 対策提案 → 実測・評価

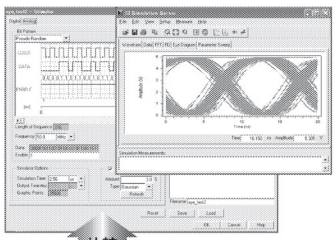
デザインコンサルティング



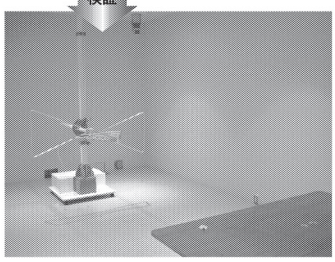
EMC Adviser



●EMCの専門エンジニアによるコンサルティング
NARTE認定エンジニアが一社一社対応。



比較検証



●自社内に実測サイト
「ZUKEN EMCラボ」実測結果を早期に反映。

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株式会社 図研

本広告内容については下記までお問合せください。
株式会社図研 営業本部 DS営業部 プロフェッショナルサービスグループ
〒224-8580 横浜市都筑区茅ケ崎中央32-11 TEL:045-942-7787 FAX:045-942-2579
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