

SESSÃO TEMÁTICA INTERNACIONAL 01:
Sala Gregório de Matos - Dia 07 de outubro de 2009 - das 08h00 às 10h00

**ADULTERACIONES EN LOS COMBUSTIBLES Y SU
IDENTIFICACIÓN MEDIANTE TRANSFORMADAS WAVELETS -
TI_ST_091_615_14396**

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Rubén Edgardo Panta Pazos (UNISC)
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**MEDICIÓN DEL DESEMPEÑO DE PROVEEDORES: LECCIONES
DEL DISEÑO DE UN CONJUNTO DE INDICADORES PARA UNA
GRAN EMPRESA - TI_ST_091_615_12944**

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Luiz Felipe Roris Rodriguez Scavarda do Carmo (PUC-Rio)
Adriana Leiras (PUC-Rio)*

**CONSIDERING AN UNPLUGGED IT WITHIN THE
ORGANIZATIONAL MEMORY - TI_ST_091_615_12764**

*José Manuel Cárdenas Medina (USP)
Ana Daneida Villanueva LLapa (USP)
Mauro de Mesquita Spínola (USP)*

**APLICACIÓN DE LA VISIÓN POR COMPUTADOR UTILIZANDO EL
ANÁLISIS DE LA TEXTURA PARA LA CLASIFICACIÓN DE
COLLAGE DE COMPENSADOS - TI_ST_091_615_13269**

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**LA ACTIVIDAD DE MANIPULACIÓN MANUAL DE CARGAS SE
CONSTITUYE DE POR SI EN UN RIESGO MÚSCULO-
ESQUELÉTICO PARA LOS TRABAJADORES EXPUESTOS: UN
ESTUDIO DE CASO EN EMPRESAS DEL SUR DE BRASIL -
TI_ST_091_615_13423**

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**ECO-PRODUCTS AND THE ENVIRONMENTAL IMPACT
GENERATED BY LOGISTICAL CHAINS - TI_ST_091_615_13190**

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CONSIDERING AN UNPLUGGED IT WITHIN THE ORGANIZATIONAL MEMORY

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Organizational memories are partially created by social networks. However, is not all the knowledge generated by those relationships that is able to be contained into physical means or Organizational Memory Systems. Thus, exists a part of tthe organizations that need to learn how to solve the concern about recovery of this important information. This paper aims to introduce the existence of a gap in the knowledge management in the limits of the technology information in an environment where is impossible to being able by it, because it is the low-hand-fruit to understand this lacuna. We understand this gap like an “unplugged IT”, once this kind of knowledge is like the idea of a tacit knowledge, but with a different concern. A case research reveals an atypical behavior of the information to explain how the unfamiliarity is managed within a commodity chain. The results present our view about the strategically understanding and driving of this new view about the unaware capabilities of the knowledge.

Palavras-chaves: IT unplugged, governance, knowledge flow, commodity chain

MEDICIÓN DEL DESEMPEÑO DE PROVEEDORES: LECCIONES DEL DISEÑO DE UN CONJUNTO DE INDICADORES PARA UNA GRAN EMPRESA

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Este artículo presenta los cuidados y recomendaciones fundamentales que deben ser considerados al definir un conjunto de indicadores que evalúen el desempeño de los proveedores activos de una gran empresa. Tales indicadores expresan la performance, en la ejecución de la venta de productos o implementación de servicios, de aquellos proveedores que ganaron alguna licitación. En ese contexto, se presentan factores que faciliten la convergencia entre los conceptos teóricos y las diferentes necesidades estratégicas y operacionales de la empresa contratante. La empresa en estudio se caracteriza por trabajar con una amplia diversidad de proveedores de bienes y servicios que definen una administración de proveedores particularmente compleja. El artículo detalla el método, los resultados y análisis de los procesos y atributos que definen el diseño de los indicadores SPE (Supplier Performance Evaluation) propuestos.

Palavras-chaves: indicadores de desempeño, proveedores, compras, supplier performance evaluation (SPE)

ECO-PRODUCTS AND THE ENVIRONMENTAL IMPACT GENERATED BY LOGISTICAL CHAINS

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The use of bio-based and synthetic plastics has been widely discussed in the last years around the world. Since the environmental awareness is growing, the Companies are expanding their interests into the use of renewable raw material resources and the potential reducing of CO₂ generation from their products. Most studies made about these materials goals to understand their characteristics, final behavior, and to make up economically viable their production in the quantity needed. This work purposes to study the supply chain of plastic covers of electro-electronic products, focused on environmental issues. Data concerning different logistical processes were evaluated as a function of their distance, transport and energy consumption. Life Cycle Analysis (LCA) was applied to evaluate the energy consumption at transportation. The following freight transportations were analyzed: overland, cargo ship, train and aircraft. Index of Environmental Impact (IEI) was built to present the influence of transportation and logistical applied.

Palavras-chaves: Logistical Chain, LCA, Environmental Impact

APLICACIÓN DE LA VISIÓN POR COMPUTADOR UTILIZANDO EL ANÁLISIS DE LA TEXTURA PARA LA CLASIFICACIÓN DE COLLAGE DE COMPENSADOS

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En este trabajo se definieron dos estrategias para el reconocimiento de patrones, de un matiz de la imagen, tratando de identificar la cantidad de pegamento en el cuerpo de pruebas y otro el control de la distribución espacial de los píxeles de la imagen. Dado que el objetivo de desarrollar una herramienta computacional a través del procesamiento de imágenes para ayudar en la inspección de la calidad de la producción de compensados para la evaluación de la textura por el análisis de la calidad de la unión, a fin de que cumplan los requisitos de la norma ISO 12466-1, que es la base para la certificación PNQM (Programa Nacional de Calidad de Madera), que será importante en el mercado nacional, es una marca de conformidad del mercado común europeo. Los resultados de simulaciones con 180 órganos de pruebas han demostrado que el sistema se compara con la evaluación de un especialista en la adopción de la calidad del pegado de paneles compensados obteniendo un porcentaje de 91,11% correcta.

Palavras-chaves: procesamiento de imágenes, la textura, el control de calidad, la automatización.

LA ACTIVIDAD DE MANIPULACIÓN MANUAL DE CARGAS SE CONSTITUYE DE POR SI EN UN RIESGO MÚSCULO- ESQUELÉTICO PARA LOS TRABAJADORES EXPUESTOS: UN ESTUDIO DE CASO EN EMPRESAS DEL SUR DE BRASIL

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La manipulación manual de cargas actividad lleva implícito riesgos biomecánicos, exceso de fuerza, posturas inadecuadas y factores organizativos que cuando presentes pueden repercutir negativamente en la salud de los trabajadores y en la producción. El presente trabajo fue desarrollado en tres empresas con el objetivo de identificar los factores de riesgo que pueden provocar la existencia de síntomas músculos-esqueléticos. Fue aplicado un cuestionario organizativo y el método español para la evaluación y prevención de los riesgos relativos a la manipulación manual de cargas en una muestra de 134 trabajadores. Fue realizado un análisis comparando los dolores totales que la muestra analizada presentó y el tiempo de trabajo, observándose 60,2% de los trabajadores que presentan dolores en diferentes partes del cuerpo están en la actividad a más de 10 años. Las partes del con mayores síntomas de dolores son la región dorsal con 76,9% , el cuello con 73,1% e las rodillas con 50,0%. El peso aceptable que puede ser cargado y manipulado en las condiciones analizadas está muy abajo del valor real de la carga y por lo tanto, las actividades analizadas son inaceptables pudiéndose considerar de riesgo para la salud de los trabajadores. Debido a la carga que los trabajadores manipulan, a las posturas que ellos son obligados a adoptar por las condiciones en que son realizadas as actividades y por los síntomas de dolor asociados a los factores de riesgos antes mencionados, la actividad puede ser catalogada de riesgo para la salud de los trabajadores expuestos.

Palavras-chaves: Síntomas músculo-esqueléticos, Carga física, Ergonomía

ADULTERACIONES EN LOS COMBUSTIBLES Y SU IDENTIFICACIÓN MEDIANTE TRANSFORMADAS WAVELETS

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La adulteración de los combustibles es realizada por diversos métodos, siendo uno de ellos la técnica de probeta, que puede realizarse en la estación de gasolina en presencia del consumidor. Estos métodos destruyen las muestras originales, amén de utilizar una cantidad mucho mayor de muestra que la propuesta en este trabajo. Aquí se presenta un método para identificar el porcentaje de alcohol en la gasolina común mediante la combinación de espectroscopia infrarroja, transformadas wavelets, análisis por componentes principales e distancia euclidiana. La aplicación de la espectroscopia infrarroja fue aplicada en el sentido de extraer la “rubrica” de la muestra del combustible, posteriormente se aplicó una transformada wavelet discreta para compactar esta “rúbrica” reduciendo el costo computacional, e así facilitar la clasificación. El Análisis por Componentes Principales (PCA) fue aplicado en la clasificación de las muestras según los porcentajes de alcohol; una identificación de mayor precisión se efectuó aplicando la distancia euclidiana. Los resultados numéricos y gráficos fueron obtenidos con el sistema de computación algebraica Maple.

Palavras-chaves: Adulteración de combustibles, wavelets, análisis por componentes principales y distancia euclidiana.

SESSÃO TEMÁTICA INTERNACIONAL 02:
Sala Fernando Pessoa I - Dia 07 de outubro de 2009 - das 08h00 às 10h00

**UN ESTUDIO PARA LA REDUCCIÓN DE RESIDUOS EN EL
PROCESO DE CORTE A PLASMA DE UNA EMPRESA
FABRICANTE DE SISTEMAS CONSTRUCTIVOS -**

TI_ST_091_615_12502

Gabriel Sperandio Milan (UCS)

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**INTEGRATED MANAGEMENT SYSTEM FOR HEALTH AND THE
ENVIRONMENT AS AN EDUCATIONAL TOOL -**

TI_ST_091_615_12687

Alcir Vilela Junior (Senac)

Zoraide Amarante Itapura de Miranda (Senac)

Jessica Iervolino Guimarães (Senac)

**MAKING USE OF THE THEORY OF CONSTRAINTS - TOC AS A
STRATEGIC DIFFERENTIAL IN THE MANUFACTURING
MANAGEMENT OF A SMALL FIRM - TI_ST_091_615_12731**

Hamilton Pozo (FACCAMP)

TAKESHY TACHIZAWA (FACCAMP)

Djair Picchiali (FACCAMP)

ENERGY MANAGEMENT IN COMERCIAL BUILDINGS -

TI_ST_091_615_13661

Andreas Dittmar Weise (UFSC)

Michael Dean Buckley (IA)

Andréa Cristina Trierweiler (UFSC)

Charles Albino Schultz (TUC)

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**ASSESSMENT OF IMPLEMENTATION OF SMALL WIND FARMS IN
SÃO TOME-IN PARÁ. - TI_ST_091_615_13258**

Leila de Fátima Oliveira de Jesus (UEPA)

Renato Henrique Gonçalves Robert (UFPA)

Risete Maria Queiroz Leão Braga (FACI)

**TECHNOLOGY TRANSFER APPLIED TO THE MANAGEMENT OF
LOGISTIC RISK - TI_ST_091_617_13354**

Claudia Tania Picinin (UTFPR)

João Luiz Kowaleski (UTFPR)

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UN ESTUDIO PARA LA REDUCCIÓN DE RESIDUOS EN EL PROCESO DE CORTE A PLASMA DE UNA EMPRESA FABRICANTE DE SISTEMAS CONSTRUCTIVOS

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El artículo tiene por objetivo desarrollar una propuesta para reducción en el volumen de residuos no proceso de corte a plasma en una empresa fabricante de sistemas constructivos. Para eso, estudios sobre producción más limpia y reducción de residuos vieran dar soporte para que hubiese un mejor entendimiento sobre esos conceptos y sobre el medio ambiente en la empresa, sirviendo como base teórica para la aplicación práctica en el desarrollo de los objetivos específicos del trabajo, visto que el objetivo general es la reducción en el volumen de residuos del proceso de corte a plasma, principalmente de chatarra metálica derivada de este proceso. De esa forma, los objetivos específicos fueron alcanzados en lo que a la propuesta se refiere, pero la efectivación del resultado solo podrá ser medida tras la implementación de las acciones, quedando su continuidad para el futuro debido a la demanda de tiempo para su ejecución. Sin embargo, queda claro que para que haya desarrollo sostenible como garantía de competitividad, la empresa deberá poner énfasis en estrategias y acciones de prevención y corrección de problemas en la base y no solamente sobre sus efectos.

Palavras-chaves: Produção más limpia, residuos, reducción de residuos.

INTEGRATED MANAGEMENT SYSTEM FOR HEALTH AND THE ENVIRONMENT AS AN EDUCATIONAL TOOL

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This article presents the implantation, certification and evaluation experience of an Environmental Management System in an environment that differs from normal company environments. This is the Santo Amaro Campus of the SENAC University Ceenter installed since 2004 in an area of 120 thousand m² that holds 21 graduation courses and 7 post-graduation courses in health, environment, fashion, art and culture, hotel management and tourism, the exact sciences and design. A population of nearly 4 thousand people circulates the campus every day, including employees and lecturers, in that nearly ¼ of this total is renewed yearly which causes the additional difficulty of guaranteeing a satisfactory level of participation and awareness of these people. The implantation of the campus SGA began in 2005 with the direct participation of 20 people among directors, employees, lecturers and students. In December 2006 the campus went through an exhaustive and successful auditing process as a form of guaranteeing adaptation to the established norm. The case studied presents particularities and innovations in relation to the usual implantation and certification of environmental management systems that are identified and discussed in this article. It is worth emphasizing the fact that the adopted model is based on ISO and OHSAS norms, three levels of certification are foreseen, with increasing scopes and complexities and incorporates elements of health and occupational safety, constituting an integrated management system. Throughout the 2nd semester of 2007 this system was object of a process of internal auditing by a group of 20 students from the 3rd year of the Bachelors course in Environmental Management Administration, acting as an important educational tool and an assessment tool for the system itself which is the objective of the present article.

Palavras-chaves: environmental management, auditing and certification, health and environment, educational tool.

MAKING USE OF THE THEORY OF CONSTRAINTS - TOC AS A STRATEGIC DIFFERENTIAL IN THE MANUFACTURING MANAGEMENT OF A SMALL FIRM

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The aim of this article is to identify some of the main strategies related to the practical use of the Theory of Constraints (TOC). It seeks to prove that this theory does not treat organizations as a collection of independent processes, but rather as an integrated system. Under this theory, the organization is viewed as a synchronized chain, in which the links between each activity form a complete system that is capable of creating synergy for the entire firm. TOC shows that every system is subject to at least one constraint that keeps it from achieving high levels of performance. In the business environment, constraints on a firm's production chain have serious consequences such as poor performance and productivity. A study of the use of TOC in a small manufacturing firm and the results obtained are shown here. Its use repeatedly made it possible to identify the constraints, and thus to improve firm performance and productivity.

Palavras-chaves: Theory of Constraints; Strategic differential; Productivity; Manufacture; Small firm.

ASSESSMENT OF IMPLEMENTATION OF SMALL WIND FARMS IN SÃO TOME-IN PARÁ.

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The objective of this work is to verify the possibility of deployment of small wind farms through the use of wind speed in Saint-Thomas (Pará). Thus, 52,705 data were recorded in the period from 01/01/2004 to 01/01/2005, of 10 measurements taken at 10 minutes taking into account height of 30m. Data were provided by GEDA - UFPA. It was the distribution of wind speed, the distribution of power density and speed of design. It was the demand of the turbine 15kw to select appropriate. It was found that for economic analysis is feasible the deployment of small, wind, by encouraging communities isolated, although notice that the unit cost of energy ($CUE = 0.17$) was superior to the Network Celpe ($CUERC = 0, 12$). However, the technical and economic viability should not despise the oscillation of the wind, which can cause reduction of energy. It is suggested that analysis of other options for generating photovoltaic energy as elements or the feasibility of adapting a system of interconnected central wind with the Network to supply fluctuations Celpe mentioned. The effectuation of choice must consider such factors.

Palavras-chaves: energy, wind, roll

ENERGY MANAGEMENT IN COMERCIAL BUILDINGS

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Energy management in commercial buildings is focused on reducing adverse environmental impact and business growth and profitability of which cost reductions are relevant. Thus energy use and its optimization are important. Since commercial buildings tend to use energy in a variety of ways ranging from environmental control to device use, it is a significant area to consider energy use, where there is a very high potential for savings. The focus of the article is on how to identify energy losses in existing buildings with some remedies as well as considerations in new construction. The article is descriptive based on a documental and bibliographic investigation. The results start with the economically correct use of energy, looking at the consumption and the management of equipment. It further discusses the measures to have less losses of energy by using materials with low heat and cool conduction, e.g. isolating doors, roof, walls and windows. In summary it is asserted that a savings of electrical use reduction of 30% can be achieved. However, it is necessary to change behaviors of use and make investments that can result in reduced operating costs.

Palavras-chaves: Energy Management, Energy savings, Facility Management.

TECHNOLOGY TRANSFER APPLIED TO THE MANAGEMENT OF LOGISTIC RISK

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This article aims to explain the forms of transfer of technology in risk management, logistics and this is the main objective. The development of a strategic plan for an isolated area of the company depends on information in the business off the company under general. The problem of research is to report outlines ways to transfer technology to the logistics segment. The management of risk is used to manage actual and potential risks to the business of the undertaking, property and lives involved, the risk manager must be informed of all proceedings arising from the strategic planning of the management. It is the importance of the research due to the need for transfer of information to the risk manager for the process is safe. The theoretical framework deals with risk management and logistic phases, technology transfer, and analysis of the company evaluated, referring to authors such as Lima, Reis, Ribeiro, and Santos Vasconcelos.

Palavras-chaves: Technology transfer, risk management, logistics.

**SESSÃO TEMÁTICA INTERNACIONAL 03:
Sala Zélia Gatai I - Dia 07 de outubro de 2009 - das 14h00 às 16h00**

**APROXIMACION A UN CANJE DE "SUERTES" DE CAÑA DE
AZUCAR A TRAVES DE UN MODELO DE PROGRAMACIÓN LINEAL
- TI_ST_091_617_13038**
Mariela Galindo Barbosa (Univalle)

**LA INFLUENCIA DE LA GESTIÓN DEL TRANSPORTE
COLABORATIVO PARA LA EFICIENCIA DE LA CADENA DE
SUMINISTROS - TI_ST_091_617_13692**
*Vanina Macowski Durski Silva (UFSC-CNPq)
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**AGENT-BASED SIMULATION APPLIED IN OPERATIONS
MANAGEMENT: A LITERATURE REVIEW - TI_ST_091_620_14558**
*Nelson Sakurada (Poli - USP)
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**OPERATIONAL SIMULATION MODEL OF THE RAW MATERIAL
HANDLING IN AN INTEGRATED STEELMAKING PLANT -
TI_ST_091_620_12674**
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**THE INFLUENCE OF THE DEMAND MANAGING STRATEGY
ENGINEERING-TO-ORDER ON THE MANAGEMENT OF STOCK IN A
GRAPHICS INDUSTRY - TI_ST_091_621_12752**
*Paulo Cesar Chagas Rodrigues (USC)
Otávio José de Oliveira (UNESP)*

**ORGANIZATIONAL SUSTAINABILITY: A CASE STUDY OF A
COMPANY IN THE BRAZILIAN SUGAR-ETHANOL COMPLEX -
TI_ST_091_621_12982**
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APROXIMACION A UN CANJE DE “SUERTES” DE CAÑA DE AZUCAR A TRAVES DE UN MODELO DE PROGRAMACIÓN LINEAL

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El siguiente artículo presenta una propuesta de modelo matemático de programación lineal entera, como herramienta para que los ingenios, y en particular estos dos ingenios, que permite hacer una asignación de suertes ya sean propias o del otro ingenio, de tal forma que minimice sus costos anuales de cosecha. Este modelo contempla los otros costos del proceso de cosecha que hasta ahora no son tomados en cuenta en este tipo de decisiones empíricas. Lo que permitiría a los ingenios conocer con anterioridad cuales suertes podrían canjear y tener mejores criterios para la negociación de dicho canje.

Palavras-chaves: Canje, Suertes, Caña de Azucar, Programación lineal entera

LA INFLUENCIA DE LA GESTIÓN DEL TRANSPORTE COLABORATIVO PARA LA EFICIENCIA DE LA CADENA DE SUMINISTROS

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Ante la competición entre las empresas, diversos factores han sido observados por los gestores con el objetivo de proponer mejoras y reducciones de costos en las cadenas de suministros, siendo uno de ellos, el aspecto relacionado al transporte de mercaderías, factor fuertemente impactante en la composición del costo del producto final. Siendo así, este trabajo, parte inicial de una tesis doctoral en desarrollo, objetiva realizar un estudio teórico sobre la relevancia de la gestión del transporte colaborativo, proveniente de la sigla CTM, del inglés, para cargas en general. La propuesta es presentar ese nuevo abordaje de modo a instigar el perfeccionamiento de la investigación e implementación de la misma por parte de los gestores con el propósito de aumentar las ventas y el nivel de servicio al cliente, reduciendo costos y capital de giro, bien como estoques en toda la cadena de suministros.

Palavras-chaves: Transporte colaborativo, Cadena de suministros, Competición, Costos

OPERATIONAL SIMULATION MODEL OF THE RAW MATERIAL HANDLING IN AN INTEGRATED STEELMAKING PLANT

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This article attempts to build an operational simulation model (OSM) of the handling of raw material in an integrated steel making plant, comprising operations for receiving, unloading, stocking, handling and supplying the different raw materials related to the production process with an operational focus, aiming to help in the decision making of the team controlling the yard. The construction of this computer model is based on the methodological structure developed by Coelho (2008). The OSM showed that most of the valid concept for simulations with a strategic focus does not present such relevance from the operational point of view. The advantage of the OSM is the fact that it is not random or stochastic, but deterministic. However, the behaviour of the OSM was considered satisfactory by the management and by the team that controls the yard.

Palavras-chaves: Operational simulation, Raw material handling, Steelmaking plant

AGENT-BASED SIMULATION APPLIED IN OPERATIONS MANAGEMENT: A LITERATURE REVIEW

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This paper provides an overview of the modeling process for operations systems using the concept of agent-based simulation (ABS), whose dissemination is relatively recent in the field of Operations Management. The agents represent entities with individual characteristics and autonomy which allow them to interact with other entities and environment, enabling the model to better represent, for instance, the behavior of human resources. Additionally to the concept of agents and its properties, this article will also discuss the advantages of ABS and the main applications in the Operations Management's literature review.

Palavras-chaves: Agent, Simulation, Operations Management

THE INFLUENCE OF THE DEMAND MANAGING STRATEGY ENGINEERING-TO-ORDER ON THE MANAGEMENT OF STOCK IN A GRAPHICS INDUSTRY

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Organizations are adopting industrial production models with priority given to reducing costs and increasing the quality of their processes and products. Optimizing and rationalization the inventory management is a great opportunity for these companies conquer these goals. For their achievement was chosen by the methodology of study of case. Data were collected through the intersection of the following tools: semi-structure, document analysis and observation in loco. Revisions are made in theoretical work on the following topics: management of materials and management system demand. These themes guided the search, allowing a greatest criticism about the collected data and information generated. The study of case was presented with a characterization of some aspects of the influence of demand management strategy on the management of inventories.

Palavras-chaves: Inventory management; demand; strategy; demand management strategy.

ORGANIZATIONAL SUSTAINABILITY: A CASE STUDY OF A COMPANY IN THE BRAZILIAN SUGAR-ETHANOL COMPLEX

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The Brazilian sugar-ethanol agribusiness, emerges as one of the promising sectors in the field of alternative energy, and is considered a major substitute for fuels obtained from the petrochemical industry. However, aspects related to the biofuels production process have recently suffered criticism, mainly related to environmental and social impacts, compromising aspects related to the sustainability. Within this context, this paper aims to analyze the level of organizational sustainability of a Brazilian company in the sugar-ethanol industry, which is considered one of the world leaders in biofuels technology. In that sense, it was conducted a case study in a plant of the largest sugar-ethanol company in Brazil, which also stands out in the world as the largest producer and processor of sugar cane; the largest producer / exporter of ethanol . The degree of organizational sustainability was evaluated through the application of questionnaires, considering the responses a weighting based on Likert scale. The results show that the company already has a corporate structure responsible for addressing issues relating to sustainability, especially the social responsibility, environment and occupational safety and health, being disseminated in the organization's culture of waste reduction, control of natural resources and a policy for receiving and recording of complaints, suggestions or demands of the people affected by its operations, products or services. However, the research also indicated aspects to be improved with the corporate sustainability goal. The strategic planning and the concern of top management are key points that need better structuring, through the promotion of strategies for growth and development of products that take into account the problems related to global warming. Similarly, the knowledge diffusion and sustainable growth culture should start from the top level organization commitment. The conducted research has draw a view of the sustainability of an Brazilian sugar-ethanol company, which is highlighted by its role on the world biofuels production. The results highlighted that is still at an early stage as to the sustainable management, being evidenced by the low commitment of top level management and uncertainty about the goals and actions to be

performed in order to establish the culture for the sustainability in the organization.

Palavras-chaves: sustainability; Brazilian sugar-ethanol agribusiness; organizational sustainability

**SESSÃO TEMÁTICA INTERNACIONAL 04:
Sala Zélia Gatai II - Dia 07 de outubro de 2009 - das 14h00 às 16h00**

**RESPONSABILIDAD SOCIOAMBIENTAL DE LA EMPRESA Y SUS
ESTRUCTURAS COMPORTAMENTALES - TI_ST_112_734_14348**

*Jose Francisco Ramos Zanca (UFF/ Latec)
Oswaldo Luís Gonçalves Quelhas (UFF/ Latec)
Helder Gomes Costa (UFF / Latec)*

**ATTITUDES OF THE LEADER: A COMPARATIVE STUDY WITH
MANAGERS AND EMPLOYEES - TI_ST_101_672_12703**

*Maciel Teixeira Lima (FASETE)
Cléverson Vasconcelos da Nóbrega (UFPI)
Marconi Freitas da Costa (UFPI)*

**PROPOSAL TO ADJUST THE BALANCED SCORECARD (BSC) FOR
SOCIALS ORGANIZATIONS - CASE OF AN EDUCATIONAL ENTITY -**

TI_ST_101_673_13265

*William Barbosa Vianna (UFSC)
Edilson Giffhorn (UFSC)
Leonardo Ensslin (UFSC)*

**ASSESSMENT OF THE PRESENCE OF ECODESIGN PRINCIPLES IN
A CHEMICAL COMPANY - TI_ST_101_675_12803**

*Miriam Borchardt (UNISINOS)
Marcos Henrique Wendt (Artecola)
Miguel Afonso Sellitto (Unisinos)
Giancarlo Medeiros Pereira (Unisinos)*

**WATERFOOTPRINT OF A BUSINESS:RESUMED METHOD FOR
CALCULATION AT INDUSTRIAL SYSTEMS - TI_ST_112_737_13283**

*Norma Ely Santos Beltrão (UEPA)
Renata Melo e Silva de Oliveira (UEPA)
Hélio Raymundo Ferreira Filho (UEPA)*

**OPERATIONS STRATEGY COMPETITIVE DIMENSIONS AND
SUSTAINABILITY - TI_ST_101_675_12922**

*Edson Pinheiro de Lima (PUCPR)
Sérgio Eduardo Gouvêa da Costa (PUCPR)
Elizabeth Ribeiro Martins Franco de Souza (PUCPR)*



ATTITUDES OF THE LEADER: A COMPARATIVE STUDY WITH MANAGERS AND EMPLOYEES

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This work has as main part, to show the importance of the applicability of the model of leadership, in the environment of managers of trade in Paulo Afonso. Given the importance of this work and taking into account the proposed theme, it was chosen the humanistic approach, qualitative and quantitative, through field research of the type descriptive exploratory. It was made a quantitative research, with application of questionnaires to the managers and employees, addressing the topic in question. The search for quality, calls for all involved, collaboration and strengthening motivational. The findings point to a paradoxical reality of the discourse of the leaders and what is actually perceived by employees. Thus, after the analysis developed, it was found in the opinion of those surveyed, to be leader is, in addition to leading a team of people with different goals and personality, is to achieve productivity with less use of resources.

Palavras-chaves: Keywords: Leadership, Attitudes of Management, Perception of Employees.

PROPOSAL TO ADJUST THE BALANCED SCORECARD (BSC) FOR SOCIALS ORGANIZATIONS - CASE OF AN EDUCATIONAL ENTITY

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The objective of this paper is to propose the construction adapted of Balanced Scorecard (BSC) to an organization of the Third Sector which has adequate Strategic Planning, taking into account the peculiarities of this segment and the organization. It is a simulation whose results point to need for acquiring knowledge of the context of operations of social organization and characterization of the same for an adequate adaptation of the BSC.

Palavras-chaves: The balanced scorecard, Strategy Implementation, Third Sector Organization.

ASSESSMENT OF THE PRESENCE OF ECODESIGN PRINCIPLES IN A CHEMICAL COMPANY

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This paper presents a case study about ecodesign constructs assessment based on a multicriterial decision support method, the Analytic Hierarchy Process (AHP). The assessment took place in a chemical firm. The methodology was developed considering that the application in other organizations, belonging to other industries, is available. Firstly, a theoretical framework about ecodesign concepts and practices was prepared. Then, a focus group with multidisciplinary team of experts in eco-conception identified seven ecodesign constructs describing the top term ecodesign. The constructs are: materials, product components, product and process characteristics, use of energy, product distribution and stocks, packing and waste. Each construct was deployed in items. Using the AHP, the ecodesign constructs were weighted by the company respondents and it was possible identified the relative importance of each construct. The constructs with higher degree of importance were product and process characteristics and waste. At the end, a questionnaire was answered by the company team in order to check the performance of each item. Compiling the items performance, we can assess the construct performance. By comparing the assessed performance with the relative importance of each ecodesign constructs, it was possible to measure the gaps between importance and performance.

Palavras-chaves: ecodesign; design for environment; Analytic Hierarchy Process

OPERATIONS STRATEGY COMPETITIVE DIMENSIONS AND SUSTAINABILITY

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Business theoretical concepts are being redefined in order to match new value propositions, which are being managed in a multiple stakeholders perspective. These multiple demands that define value, cover economic, environmental and social issues and they are the new design requirements for operations systems. These new concepts result in new models for describing and explaining production processes, operations strategy and performance measurement systems. The main purpose of this paper is to discuss and position these new drivers of value creation in an operations strategic management framework. A model is constructed based on literature review. The framework proposed in this paper shows some evidences on how sustainability factors are related to technical system design, operations strategy decision areas and performance dimensions.

Palavras-chaves: sustainability, operations strategy, performance dimensions

RESPONSABILIDAD SOCIOAMBIENTAL DE LA EMPRESA Y SUS ESTRUCTURAS COMPORTAMENTALES

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El presente artículo se propone analizar con base en el estado de la arte de la literatura científica , las correlaciones teoricas entre los conceptos de comportamiento organizacional y el continuo etico, indicando sus contribuciones para el constrcto de la “responsabilidad social corporativa” . Como conclusión se observa que los valores corporativos situados en el ambito del comportamiento organizacional, son percibidos como pricipal factor inductor de las respuestas (actitudes) de ola organización para con su responsabilidad social corporativa

Palavras-chaves: Comportamiento organizacional , Responsabilidad Social Corporativa , Valores organizacionales

WATERFOOTPRINT OF A BUSINESS:RESUMED METHOD FOR CALCULATION AT INDUSTRIAL SYSTEMS

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Business Water Footprint (BWF) consists on a measurement driver of water use for industry, by which it can be quantified the total amount of water volumes consumed, their destinations, flows standards and volumes of water pollution flowing back to a environmental system. Through the method presented in this paper it is possible to start up analysis on the impact of an installed industrial plant requirements of water, and yet its quality after being used during a production process. The measure of water footprints is composed by three basic elements: green and blue water consumption and wastewater production (grey water). This last, represents the volumes of water polluted by a certain industrial process which is freed back to blue water sources. This work proposes to present a review and a resumed rout for calculating BWF for industrial systems appliance, concerned mostly to the work of Leenes and Hoekstra (2008): method for the business accounting footprint. As well, this paper presents comments about the potential impacts of water scarcity for industry.

Palavras-chaves: Business Water Footprint, Sustainability, Water Management

**SESSÃO TEMÁTICA INTERNACIONAL 05:
Sala Zélia Gatai I - Dia 07 de outubro de 2009 - das 16h30 às 18h30**

**REGRESIÓN LINEAR COMO HERRAMIENTA DE PREDICCIÓN DE
LOS ENSAYOS DE RESISTENCIA EN LA INDUSTRIA DE
CELULOSA Y PAPEL - TI_ST_103_685_13588**

Johnny Rocha Jordan (UNIPLAC)

**MANAGING THE QUALITY OF CONSULTING FIRMS' PRODUCTIVE
PROCESSES - TI_ST_092_623_14192**

GUILHERME BRUM GAZZONI (UNB)

MARTHA VERAS (UNB)

**ANALYSIS OF THE THEME AUDIT OF QUALITY MANAGEMENT
SYSTEM IN EMERALD, SCIELO, SCIENCE DIRECT AND SPRINGER
DATABASES - TI_ST_103_686_13942**

Paulo Henrique Paulista (UNIFEI)

João Batista Turrioni (UNIFEI)

**A COMPETENCE-BASED APPROACH TO SERVICE DESIGN:
USING THE SERVQUAL MODEL TO IDENTIFY SERVICE
REQUIREMENTS FOCUSED ON CLIENTS EXPECTATIONS. -**

TI_ST_092_627_14289

Daniel Gonçalves Simões dos Santos (CEFET-RJ)

Úrsula Gomes Rosa Maruyama (CEFET-RJ)

Caroline Abranches Bernardes dos Santos (UVA)

Raquel Gonçalves Coimbra Flexa (CEFET-RJ)

**STUDY ON THE RELATIONSHIP AMONG INMETRO AND THE
REGULATORY AGENCIES AND MINISTRIES FOCUSING ON
CONFORMITY ASSESSMENT ACTIVITIES - TI_ST_092_627_13189**

Helder Gomes Costa (UFF)

MARIA APARECIDA MARTINELLI (INMETRO)

**DIMENSIONES DE LA CALIDAD EN SERVICIOS Y LA
SATISFACCIÓN DE CLIENTES EN UNA IES - TI_ST_092_627_12500**

Luciene Eberle (UCS)

Gabriel Sperandio Milan (UCS)

Fernanda Lazzari (UCS)



MANAGING THE QUALITY OF CONSULTING FIRMS' PRODUCTIVE PROCESSES

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This article presents guidelines for controlling the quality level of the service produced by consulting firms, based on the identification of techniques that already exist for that purpose, and on the adaptation and testing of those guidelines in a business headquartered in Brasília - DF - Brazil that provides consulting solutions since 1998. The starting point for the study was the detailed analysis of the aforementioned company's productive process, which is highly technical and specialized. Following this analysis, the critical points and indicators that actuate directly in the way quality is recognized by consumers were mapped, and, with such information, it was possible to apply techniques of quality control in the production line. The quality control, which is imperative to obtain a productive quality that is constant and that adheres to specifications, was the focal point of this research. Since it is not possible to see or touch the final product of a consulting firm, there still remains a great difficulty in measuring and evaluating quality in these companies. However, the guidelines proposed in this study make it possible to determine: a) the part of the process that shall be controlled; b) the frequency of the control; c) which sample shall be considered; and, d) how to analyze and control the quality of consulting services. The study also allowed conclusions to be made regarding which actions to take, based on the information provided by a quality control, and the importance of a reviewing process for consulting firms' production.

Palavras-chaves: Production, quality, quality control, consulting firms.

DIMENSIONES DE LA CALIDAD EN SERVICIOS Y LA SATISFACCIÓN DE CLIENTES EN UNA IES

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El estudio busca identificar y evaluar la percepción de los clientes (alumnos) sobre los servicios prestados en una IES de la Sierra Gaucha por medio de la identificación de los atributos que influyen en su satisfacción y de dimensiones o factores relacionados a la calidad, que pueden ser sugeridos en la búsqueda de un diferencial competitivo en los cursos de postgrado (lato sensu). La identificación de los atributos y, por ende, de las dimensiones de la calidad relacionadas a los servicios prestados pueden ayudar a la Institución a priorizar acciones, considerando la percepción de los alumnos, para así añadir calidad a los servicios, contribuyendo para la excelencia en la educación, además de estimular la retención de clientes (alumnos) y consolidar su posicionamiento de mercado. Los resultados obtenidos evidenciaron seis dimensiones de la calidad de los servicios prestados, que podrán servir como base para direccionamientos para la IES.

Palavras-chaves: Calidad en servicios, servicios educativos, satisfacción de clientes.

STUDY ON THE RELATIONSHIP AMONG INMETRO AND THE REGULATORY AGENCIES AND MINISTRIES FOCUSING ON CONFORMITY ASSESSMENT ACTIVITIES

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The activity of conformity assessment developed by Inmetro causes impacts in distinct sectors of society and involves partnerships with many governmental agencies and ministries in the field of mandatory conformity assessment programs. In some situations, these institutions develop their own conformity assessment programs without availing themselves of the use of the third-party infrastructure already available in the Brazilian Conformity Assessment System - SBAC, a part of Sinmetro that is managed by Inmetro. This work presents a study about the relationship among Inmetro and governmental agencies and ministries regarding conformity assessment activities. This work presents an approach to evaluate the perceptions and the gaps in perceptions between managers of the Directorate of Quality of Inmetro and managers of governmental agencies and ministries in regard to the conformity assessment service developed by Inmetro. The information used in this paper has been collected from the responses of 56 technicians and managers of two distinct groups to a structured questionnaire. This questionnaire focused on issues involving the performance as well as the role of Inmetro in the development of conformity assessment programs. Following a review of the responses, it was verified that the respondents: (1) highlighted the partnership with Inmetro as valuable; (2) presented proposals whereby Inmetro could enhance its service; and (3) at the same time, set forth some reasons that impede conformity assessment partnerships with Inmetro.

*Palavras-chaves: Conformity assessment. Regulators.
Gaps.Perception.*

A COMPETENCE-BASED APPROACH TO SERVICE DESIGN: USING THE SERVQUAL MODEL TO IDENTIFY SERVICE REQUIREMENTS FOCUSED ON CLIENTS EXPECTATIONS.

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The increasingly importance of organizational performance in the last years has made corporations pursuit operations efficiency and demand a service design approach truly aligned with the client necessities. The method based only on the manager's perceptions is likely to fail, once demand is volatile and the client expectations might vary in the meantime. This paper aims to discuss this issue from the service gaps standpoint with the competence management approach as a theoretical contribution to the service science foundations. In addition, the SERVQUAL model was chosen to complement the proposed approach for being a practical and widely known tool. Given the experience gained with the competence method, this study envisions a better outcome to organizations based on knowledge-intensive activities, or human-intensive processes. Henceforth, we intend to build an ICT platform to foster the development of effective and lean operations. Finally, integrating these practices would lead to an outstanding end, which is delivering a real value to the client expectations.

Palavras-chaves: SERVICES, QUALITY, COMPETENCE

REGRESIÓN LINEAR COMO HERRAMIENTA DE PREDICCIÓN DE LOS ENSAYOS DE RESISTENCIA EN LA INDUSTRIA DE CELULOSA Y PAPEL

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El objetivo de este trabajo es utilizar el herramental estadístico de manera a poder obtener valores de SCT a partir de datos reales de RCT, sin llevar en consideración, sin embargo, las diferentes configuraciones de máquinas y sus variables de la fabricación del papel o las variables del cocimiento. En algunos países, es el principal ensayo realizado y también la principal característica utilizada por las empresas fabricantes de cajas, en la selección de sus abastecedores. La explicación para este hecho está en la relación existente entre la resistencia de la hoja al aplastamiento y a su influencia en la capacidad del embalaje resistir al apilamiento de un determinado número de cajas. Mientras, el ensayo de RCT presenta algunas características inherentes a su método de test, sea en función del equipo utilizado, sea en función del soporte y discos usados para análisis. Además de estas variables está la extensión de la faja (152 mm) a ser utilizada y su correcto manoseo durante la ejecución del ensayo. En contrapartida, muchas fábricas en varios países de Europa (y algunas en el Brasil), utilizan el ensayo Short Span Compression Test (SCT), como alternativa al RCT, teniendo como justificativa la rapidez y la practicidad del ensayo, además de la menor variabilidad de sus resultados.

Palavras-chaves: Regressão, Short Span, Ring Crush test, herramienta estadística

ANALYSIS OF THE THEME AUDIT OF QUALITY MANAGEMENT SYSTEM IN EMERALD, SCIELO, SCIENCE DIRECT AND SPRINGER DATABASES

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More and more companies are implementing a quality management system to improve the quality of their product to the customer. To assess a quality management system, companies perform audits their systems, so there are some researches about this topic. This article aims to review the searches that have been made about audit of quality management system, analyzing only articles published by Emerald, SciELO, Science Direct and Springer databases. A search in those databases was carried out using the words “quality audit” in different ways in the fields of search. 20.67% of the articles found related to the area of quality, but only 18 articles dealing specifically with audit and 16 articles were analyzed.

Palavras-chaves: Audit, Quality, Quality management system

**SESSÃO TEMÁTICA INTERNACIONAL 06:
Sala Zélia Gatai II - Dia 07 de outubro de 2009 - das 16h30 às 18h30**

**THE USE OF DESIGN IN THE QUALITY MANAGEMENT: A CHANGE
OF PARADIGMS IN THE FURNITURE SECTOR OF SANTA MARIA -
RS - TI_ST_092_627_14027**

Leoni Pentiado Godoy (UFSM)
Alexandre Rodrigues Ferreira (UFSM)
Sandro Luís Moresco Martins (UFSM)
José Leonardo Paz Diniz (UFSM)

**PROPUESTA DE UNA SISTEMÁTICA DE ADMINISTRACIÓN DE
COSTES EN EL MÉTODO ABC PARA PEQUEÑAS
ORGANIZACIONES DE SERVICIOS - TI_ST_093_628_14502**

Nara Stefano (UFSM)
Leoni Pentiado Godoy (UFSM)

**IMPACTS IN REAL OPTION VALUE DUE TO THE USE OF
DIFFERENT DATA TO ESTIMATE INPUT PARAMETERS: A
PETROLEUM PROJECT CASE - TI_ST_093_628_14092**

Carlos Alexandre Camargo de Abreu (UFC)

**APLICACIÓN DE UNA METODOLOGÍA DE MEDICIÓN DEL RIESGO
FINANCIERO DE MERCADO EN EMPRESAS DEL SECTOR REAL -
TI_ST_093_628_13021**

Victor Javier Jimenez Carabali (Univalle)

**ENVIRONMENT FOR FOREIGN INVESTMENT IN BRAZIL SINCE
JANUARY 1999 - TI_ST_104_693_13196**

Marcelo Henriques de Brito (Probatas)

**USE OF FUZZY LOGIC TO OPTIMIZATION OF POWER SYSTEMS
BASED IN GREEN ENERGY - TI_ST_110_728_13368**

Ederson Luis Posselt (UNISC)
Fabiano Horn (UNISC)
Rolf Fredi Molz (UNISC)

**PERFORMANCE TEAM EVALUATION IN 2008 BEIJING OLYMPIC
GAMES - TI_ST_104_694_14184**

João Carlos Correia Baptista Soares de Mello (UFF)
Lidia Angulo Meza (UFF)
Fábio Gomes Lacerda (UFF)
Luiz Biondi Neto (UERJ)



THE USE OF DESIGN IN THE QUALITY MANAGEMENT: A CHANGE OF PARADIGMS IN THE FURNITURE SECTOR OF SANTA MARIA - RS

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This study aims to identify the customer needs in the furniture sector in the region of Santa Maria - RS. It has the purpose of providing benefits of a theoretical and practical order to add value through the use of design in the furniture production. The lack of professionals in the design business is a big challenge, because it involves changes in the paradigms that, as a matter of fact, refer to the acceptance of design as a differential factor. For the theoretical basis of the study it was used the furniture industry, emphasizing their main characteristics, as well as the origin and evolution of the management of design and quality. The field work was conducted through semi-structured interviews with managers of the micro and small companies. It was used in the research a questionnaire to seek the opinions of consumers on the importance of using design as a differential factor. The data found in the questionnaires were compared with the interview with the managers, and the results reinforce the need for companies using design as a tool in quality management.

Palavras-chaves: Management of design, quality, competitiveness, paradigms.

APLICACIÓN DE UNA METODOLOGÍA DE MEDICIÓN DEL RIESGO FINANCIERO DE MERCADO EN EMPRESAS DEL SECTOR REAL

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Los trabajos de investigación sobre medición de los riesgos financieros de mercado son actividades que en muy poco tiempo han experimentado un crecimiento significativo, según D'Ecclesia (2008) hace solo veinte años que la academia empezó a realizar grandes esfuerzos por desarrollar mediciones de riesgo apropiadas, y herramientas para la gestión del riesgo. Actualmente, casi de forma rutinaria, los sistemas implementados en el sistema financiero generan medidas de riesgo que son utilizadas de diversas formas como una importante herramienta de gestión, lo que no ocurre en empresas del sector real. Este artículo presenta una metodología para la medición del riesgo de mercado en empresas del sector real, basándose en conceptos económicos, estadísticos y de simulación; orientada a ser una herramienta para la toma de decisiones.

Palavras-chaves: Riesgo de mercado, Sector Real, Valor en Riesgo, Flujo de Caja en Riesgo, Utilidad en Riesgo, Simulación Monte Carlo

IMPACTS IN REAL OPTION VALUE DUE TO THE USE OF DIFFERENT DATA TO ESTIMATE INPUT PARAMETERS: A PETROLEUM PROJECT CASE

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Traditionally in the oil industry, managers have used economic evaluation methods based on discounted cash flow supposing a deterministic future, where risks are considered by elevations on the rate at which future cash flows are discounted. These methodologies do not internalize possible flexibilities that companies have when dealing with an investment. Oil and Gas industry projects have a hand full of uncertainties which are linked to a few flexibilities that offer options during the time of its operations. The presence of these flexibilities suggests the need to include it in economic analysis of projects. The Real Option Valuation model in this paper, include the possibility of delaying a project due to expected better price future conditions. Real option theory intenalizes and evaluates flexibilites that investmens projects have, and treat risk different from traditional methods. This paper makes an economic evaluation of a simulation of an oil field in its development and production stage. We used both traditonal Net Present Value and a Real Option Valuation Model in the analysis and compared the results of both methods. The second and main part of the research is the analysis of effects on option value if we use different types of oil price data to estimate Real Options input parameters (Volatility and trend). We have observed that tuhe use of different data may have a significant variation of a project's monetary values.

Palavras-chaves: Economic analysis, real options, oil prices

PROPUESTA DE UNA SISTEMÁTICA DE ADMINISTRACIÓN DE COSTES EN EL MÉTODO ABC PARA PEQUEÑAS ORGANIZACIONES DE SERVICIOS

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Este estudio tuvo como objetivo principal proponer una sistemática de gestión de costes fundamentada en los Costes Basado en Actividades (ABC) para las pequeñas organizaciones que prestan de servicios a gestionar mejor sus costes. Definida una sistemática, se desarrolla en una organización presta la asistencia y consultoría en informática, fue utilizada parcialmente para la actividad “entrega del producto (implantación de sistema)”. Hube a necesidad de conocer los procesos, actividades y los recursos envueltos para constituir los direccionadores de costes y calcular el coste del servicio. Se concluye que la sistemática basada en el método ABC es aplicable en pequeñas organizaciones prestadoras de servicios por el hecho de originar una apropriação de costes más precisa y, con eso, proporcionar informaciones para la toma de decisiones.

Palavras-chaves: Servicios; pequeñas organizaciones; coste ABC.

ENVIRONMENT FOR FOREIGN INVESTMENT IN BRAZIL SINCE JANUARY 1999

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During the last ten years, after a severe financial crisis, the Brazilian government claims to adopt the so-called “inflation-targeting regime” with a floating exchange rate regime. However, the exchange rate did not actually vary randomly in the last years. Indeed, rather than the evolution of the inflation rate, data since January 2003 together with statistical analysis reveal that it was the expectation of how the exchange rate would vary that has influenced decisions of The Monetary Policy Committee (Copom) of Brazil’s Central Bank (BCB) regarding the goal for the basic short-term interest rate in Brazil (known as Over-Selic interest rate). Thus, Brazilian government actually carries out a monetary policy to secure or accumulate hard currency, which reduces international vulnerability, besides also being favourable to the foreign capital that seeks consistent yields. Moreover, long strings of data from July 1999 until March 2009 unravels that the spread between the Over-Selic interest rate and the Federal Funds interest rate (USA) is positively correlated to the Brazilian inflation index IPCA (i.e. .87). This figure contradicts the belief that an interest rate increase curbs inflation in Brazil. Furthermore, an increase of the main Brazilian stockmarket index (Ibovespa) occurs normally together with the revaluation of the Real towards the US Dollar and the Euro, which enhances the profitability of foreign investment in Brazil’s stock exchange. Finally, this work presents a simple ratio with its corresponding data since January 1999 that exposes straightforwardly under which conditions fixed income investment has been more profitable than stock exchange investment in Brazil.

Palavras-chaves: investment decision, exchange rate, interest rate, inflation rate, monetary policy, fixed income, stock market

PERFORMANCE TEAM EVALUATION IN 2008 BEIJING OLYMPIC GAMES

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In recent years, a lot of work has been done dealing with alternative performance rankings for the Olympic Games. Almost all of these works use Data Envelopment Analysis (DEA). Generally speaking, those works can be divided into two categories: Pure rankings with unitary input models and relative rankings with classical DEA models; both output oriented. In this paper we introduce an approach taking into account the number of athletes as a proxy to the country investment in sports. This number is an input for a DEA model, and the other input is the population of the country. We have three outputs, the number of gold, silver and bronze medals earned by each country. Contrary to the usual approach in the literature, our model is not output oriented. It is a non-radial DEA model oriented to the input "number of athletes". The Decision Making Units (DMU) are all the countries participating in the Beijing Olympic Games, including those which did not earned any medal. We use a BCC model and we compare the target of each DMU with the number of athletes that earned, at least, a single medal.

Palavras-chaves: DEA, Sport Evaluation, Olympic Games

USE OF FUZZY LOGIC TO OPTIMIZATION OF POWER SYSTEMS BASED IN GREEN ENERGY

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The replacement of standard power sources by renewable power sources is growing fast in the last years. This affirmative comes true because of the awareness of the care about the planet, where natural resources degradation is well-known, produced in great part for the man himself. Looking the proposals created to strengthen the world we live is the “green energy”, that is generated from natural renewable resources like sun, wind, hydric resources with low environmental impact and others. The storage of green energy is a problem today, in the opposite way of the standard power sources like hydroelectric energy and nuclear power plants, the green energy does not keep and guarantee a continuous production. Considering the situations emphasised previously, it was projected an intelligent system able to rationalize the green energy acquired, in the way to have a renewable energy captivation environment and environmental correct with an appropriate cost/benefit. The developed system uses the diffuse logic to determine the level of economy in which the green system will have to behave. To carry out this task, the system looks in the Internet for informations about the weather forecast associated with the current level of the sets of batteries of the system, these informations are prosecuted by rules of inference and subsequently they establish the way how the system works. After implementation of the system we noted that the objectives were reached having as a result a reliable and agile system, representing an important tool in the using of the resources of the green energy, being one more component in the struggle for the conservation of the environment.

Palavras-chaves: Green Energy, Logic Fuzzy, Management, Weather forecast

**SESSÃO TEMÁTICA INTERNACIONAL 07:
Sala Zélia Gatai I - Dia 08 de outubro de 2009 - das 14h00 às 16h00**

**DEA EFFICIENCY MEASUREMENTS OF OLYMPIC GAMES
WINNING COUNTRIES AND THE SIGNIFICANCE OF COVARIATES
- TI_ST_093_632_13888**

Geraldo da Silva e Souza (Embrapa)
Eliane Goncalves Gomes (Embrapa)

**A PARAMETRIC APPROACH FOR EVALUATING THE TECHNICAL
EFFICIENCY OF THE BRAZILIAN AGRICULTURAL SECTOR -**

TI_ST_093_632_13154

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Alcido Elenor Wander (CNPAP)
Rodrigo da Silva Souza (CNPAP)

**AN ESSAY ON THE QUEST FOR A BRAZILIAN S,T&I POLICY -
TI_ST_093_632_12949**

Marcio da Silveira Luz (UNITAU)
Isabel Cristina dos Santos (UNITAU)

**PRÁCTICAS DE MARKETING INTERNO PARA LA GESTIÓN DE
PERSONAS - TI_ST_094_633_13300**

Luciano Zamberlan (UNIJUÍ)
Zelia Savoldi (COTRIROSA)
Ariosto Sparemberger (UNIJUÍ)
Pedro Luís Büttenbender (UNIJUÍ)
Luciana Maria Scarton (CEPAN)

**EVALUATION OF THE OCCUPATIONAL HEALTH AND
ENVIRONMENT OF CITY BUS DRIVERS, CONSIDERING
ERGONOMIC FACTORS - TI_ST_094_636_13403**

Emilia Rahnemay Kohlman Rabbani (UPE)
Béda Barkokébas Junior (UPE)
Eliane Maria Gorga Lago (UPE)
Antero Frederico Mota Parahyba (UPE)
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**SAFETY AND HEALTH AT WORK AND THE ACADEMIC AND
PROFESSIONAL GRADUATION OF THE ARCHITECTS -**

TI_ST_094_636_14513

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AN ESSAY ON THE QUEST FOR A BRAZILIAN S,T&I POLICY

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This essay intends to make a first appraisal of Brazilian Science, Technology and Innovation - S,T&I policy. It is stressed that historical evolution peculiarities must be taken into account. It can be seen that Brazilian lack of culture, with kept the nation out of Enlightening an Industrial Revolution socio-cultural and economic movements produced such a gap difficult to overcome. Technological take-off is the situation where a country acquire ST&I maturity enabling it to get into global markets with high technological content goods with success. Some industrialization models are briefly discussed and will be shown that the chosen industrialization model has definite impact on a ST&I development model, and to assure take-off, cannot be examine separately. Some take-off suggestions are given at the end.

Palavras-chaves: Brazilian ST&I Policy, Brazilian ST&I Evolution, Brazilian Industrial Evolution



A PARAMETRIC APPROACH FOR EVALUATING THE TECHNICAL EFFICIENCY OF THE BRAZILIAN AGRICULTURAL SECTOR

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In this study we assessed the technical efficiency of the 27 Brazilian states in the years 1995/96 and 2006. The data on land and labor were obtained from the agricultural census of the two considered periods. Data on credit for investment and running costs were obtained from the Brazilian Central Bank reports. In the analysis we used a DEA CCR model and a stochastic frontier with technical effects. The second model better fit the data, with 99% of correlation between predicted and observed values. The results show that Distrito Federal had the highest technical efficiency in agriculture in 2006 and the second highest in 1995/96. The lowest technical efficiency was found in Piauí in 2006 and in Tocantins in 1995/96. The estimated elasticities show that increases of 1% in per capita income would increase the technical efficiency by 0.77% in the North, by 0.76% in the Northeast, by 0.59% in the Center-west, by 0.56% in the South and by 0.49% in the Southeast region.

Palavras-chaves: Technical efficiency, Stochastic frontier, Elasticity, Agriculture

DEA EFFICIENCY MEASUREMENTS OF OLYMPIC GAMES WINNING COUNTRIES AND THE SIGNIFICANCE OF COVARIATES

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Using two stage statistical inference we assess the significance of per capita income and investment in sports on the Olympic efficiency scores of countries. The number of participating athletes is the proxy for investment in sports. These are computed using unit inputs and weights restrictions on the medals distributions. We compare the fits of the distributions gamma and truncated normal to non efficient countries. These include as particular cases the half normal and the exponential, which are of standard use in efficiency analysis. The estimation method is maximum likelihood. We use decision criteria to arrive at a best model. Only medal achieving countries are considered in the sample.

Palavras-chaves: DEA; Contextual Variables; Olympics.

PRÁCTICAS DE MARKETING INTERNO PARA LA GESTIÓN DE PERSONAS

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Considerando la relevancia de la prestación de servicios internos y las relaciones internas y del comprometimiento de las personas para que las organizaciones obtengan éxito en sus actividades, el presente trabajo hace una evaluación de las acciones de marketing interno en una Cooperativa en el interior de Rio Grande do Sul. Para desarrollo del estudio, se realizó inicialmente una pesquisa cualitativa. Esta etapa objetivó evaluar la percepción de los individuos a respecto del marketing interno e identificar los principales aspectos a ser evaluados en la fase descriptiva. Desde estas informaciones y de las referencias teóricas fue elaborado un cuestionario estructurado aplicado a 79 de los 87 colaboradores de la Cooperativa. El Survey fue utilizado para evaluar la percepción de las personas sobre las prácticas adoptadas por la organización considerando las dimensiones de Coordinación, Costo, Compañía y Comunicación. Los resultados destacan la buena imagen que los colaboradores poseen de la Cooperativa. Las principales fragilidades están concentradas en los aspectos relacionados con la remuneración y la comunicación organizacional. El instrumento presentado contribuye para evaluar el marketing interno de organizaciones cooperativas, sirviendo de subsidios para la elaboración de proyectos y la organización del trabajo.

Palavras-chaves: Marketing Interno, gestão de pessoas, colaboradores

EVALUATION OF THE OCCUPATIONAL HEALTH AND ENVIRONMENT OF CITY BUS DRIVERS, CONSIDERING ERGONOMIC FACTORS

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This paper deals with the macro-ergonomic approach to the identification of problems observed in bus drivers with regard to the principal occupational illnesses related to ergonomic demands, including stress. A study of medical leave certificates was performed, presented by drivers from a medium-sized bus company in the city of Recife, characterized by a fleet of 120 vehicles. Interviews were also conducted to obtain specific information about drivers' personal data, physical conditions and health, work equipment, and postural discomfort. Finally, a new type of chair was installed in some of the vehicles of the fleet and a new satisfaction analysis was conducted with the employees who used it. The results of the study show an elevated level of absenteeism related to illnesses characterized by problems of posture and stress, which became evident after the analysis of medical leave certificates. The acceptance of the new chair was unanimous among the workers who used it, all of them claiming a reduction in their principal complaints, such as back pain. Improving the working conditions of drivers represents a tiny cost compared to the social and economic benefits for employers, workers, and other users of the transportation system, therefore it is necessary to periodically invest in the evaluation of working conditions in order to propose appropriate and effective preventive measures.

Palavras-chaves: Occupational safety, ergonomics, occupational illnesses, absenteeism

SAFETY AND HEALTH AT WORK AND THE ACADEMIC AND PROFESSIONAL GRADUATION OF THE ARCHITECTS

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The architect assumes a role of extreme importance in the phase of planning of an enterprise, since, the architectural design is the starting point for all other designs, besides displaying propitious conditions for the anticipation and ideentification of possible problems in all useful life of the enterprise, including those related to the risks of accidents at work. The research goal was to analyze the academic formation and the accumulated theoretical and practical knowledge throughout the professional career of the architects, in the field of the safety and health at work. Therefore, a survey of the existing courses of graduation in architecture in the State of Pernambuco - Brazil was carried through, aiming the analysis of the curricular grade of each one of these courses. Moreover, it was elaborated and applied an interview protocol, in order to verify the technical knowledge and the performance of architects in the field of the safety and health at work. The results shed light on the need of reformulation of the curricular grade composition in the architecture courses, as well as, a cultural change on the part of all the involved professionals in the development of an enterprise, as entrepreneurs, customers, design co-ordinators and designers in general.

Palavras-chaves: Architectural Design. Design-Coordination. Safety and Health at Work. Construction.

**SESSÃO TEMÁTICA INTERNACIONAL 09:
Sala Zélia Gatai II - Dia 08 de outubro de 2009 - das 14h00 às 16h00**

**PETROLEUM INDUSTRY NEW FACILITIES DESIGN:
CONTRIBUTIONS OF DIGITAL HUMAN SIMULATION -
TI_ST_094_639_13528**

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Nilton Luiz Menegon (UFSCar)
João Alexandre Pinheiro Silva (UFSCar)
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**HUMAN MODELING AND SIMULATION: CASE STUDIES OF
INCORPORATING ERGONOMIC ANALYSES INTO WORKPLACE
DESIGNS - TI_ST_094_639_13526**

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**SIMILARITIES AND DIVERGENCES IN THE NEW PRODUCT
DEVELOPMENT PRACTICES: COMPARING TECHNOLOGY-BASED
COMAPANIES IN THE MEDICAL DEVICE AND PROCESS CONTROL
AUTOMATION DEVICE INDUSTRIES - TI_ST_106_707_14624**

*Glauco Henrique de Sousa Mendes (UFSCar)
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**ERGONOMICS AND USABILITY ON NEW PRODUCTS
DEVELOPMENT PROCESS AT THE MEDIUM SIZE FURNITURE
FACTORIES: AN EXPLORATORY STUDY - TI_ST_095_645_14191**

*Delcio Pereira (UDESC/UTFPR)
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**UNA PROPUESTA DE MÉTODO PARA IDENTIFICAR LAS
CARACTERÍSTICAS LINEALES Y SISTÉMICAS EN MODELOS DE
DESARROLLO DE PRODUCTOS - TI_ST_095_646_12474**

*Carlos Fernando Jung (UFRGS)
MARIELA HAIDEE ARANDA (UFRGS)
Carla Schwengber ten Caten (UFRGS)*

**A METHOD OF R&D ELECTRONIC PRODUCT FOR APPLICATION
BY INDEPENDENT ENGINEERS, DESIGNERS AND INVENTORS -
TI_ST_095_646_12541**

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HUMAN MODELING AND SIMULATION: CASE STUDIES OF INCORPORATING ERGONOMIC ANALYSES INTO WORKPLACE DESIGNS

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This paper investigates the contribution of a human modeling and simulation software in two different applications: workstation in a medical products industry and a costumer service counter. This study examines its application in sectors iin which these techniques had not been well developed yet. The same way, it can contribute to the application in other areas as well. The results achieved were: evaluations of the visual fields, determination of workplaces' physical characteristics, visualization of reach envelopes and improving communications between different people involved in the process, reduce the time spent on the process, and especially, preliminary considerations of human factors.

Palavras-chaves: Workplace design, human modeling and simulation, ergonomics

PETROLEUM INDUSTRY NEW FACILITIES DESIGN: CONTRIBUTIONS OF DIGITAL HUMAN SIMULATION

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The aim of this study is applying human modeling and simulation tools to assist in the ergonomics designs of new petrochemical industry facilities. The approach adopted was a comparative analysis of the actual buildings floorplans and future activities schedule in order to investigate the benefits and constraints of these tools in the process. It is known that due to the numerous demands and the complexity of conceiving projects in a continuous process industry, the practitioner designers segment the project into several expertise developed by different outsourcing specialized companies. However, this development approach leads to significant difficulties to apply ergonomics concepts and tools which require the multidisciplinary integration since they are based on the project's activities, operation, and overall performance. This work presents a case study in a Brazilian petroleum refinery including diagnosis, project, and implementing new facilities according to human social and practical needs and the use of 3D modeling software and digital 3D human mannequins. This study presents the thorough project involving human capabilities in relation to their work demands and an analysis based on the virtual simulation and the conceptual plan development. It also identifies the human modeling and simulation contributions to future activities analysis and mainly to new productive situations in a continuous process industry when dealing with highly complex projects involving human factors. This work intends to increase the interface among designers and ergonomists since only a few ergonomics principles remain during the whole development cycle until the validation of the solutions implemented based on this concept specifically.

Palavras-chaves: Facilities design, digital human simulation, ergonomics, petroleum industry

ERGONOMICS AND USABILITY ON NEW PRODUCTS DEVELOPMENT PROCESS AT THE MEDIUM SIZE FURNITURE FACTORIES: AN EXPLORATORY STUDY

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This study is about the Development process on New Products (DNP) emphasizing the ergonomics conduct as well as the usability of its applications including management analysis of new offers in three medium size furniture factories. These plants are located at the “Pólo do Alto Vale do Rio Negro”, Santa Catarina State, south Brazil, one of the main of the country and the observation was made through a comparative study of the practices of these plants as well as an analysis on the literature. The research was conducted with a methodological approach, based on interviews made during the visits to these plants. The obtained results inform that the implementation of a DNP not always consider the ergonomics aspects, especially when the concepts and the proposals of the products derived from the intermediates. This attitude from the management might represent a significant risk to the companies, as it is firstly linked to a lesser valuation on the quality of the manufactured items. Also, the tendency of risks at the use of these products might even cause legal actions against the companies. Thus a consideration is required about the DNP process in order to enable a better performance of the furniture which might be adequate to both sides: manufacturers and their customers.

Palavras-chaves: Furniture factory; New Products Development; Ergonomics, Usability

UNA PROPUESTA DE MÉTODO PARA IDENTIFICAR LAS CARACTERÍSTICAS LINEALES Y SISTÉMICAS EN MODELOS DE DESARROLLO DE PRODUCTOS

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El presente artículo muestra los resultados de una investigación exploratoria de abordaje cualitativa, que tuvo por finalidad desarrollar un Método para identificar características lineales y sistémicas en modelos de Desarrollo de Productoss (DP). Las características lineales y sistémicas de un modelo pueden revelar la forma de cómo los individuos entienden el mundo y elaboran métodos para el desarrollo de nuevos productos y procesos. A su vez, estos métodos pueden influenciar el desempeño de los procesos de desarrollo en las empresas. El trabajo tuvo como principales resultados: un Método teórico-práctico para identificación, clasificación, e interpretación de características lineales y sistémicas tornando posible la oferta de un referencial para futuras investigaciones en el área como también la oferta de un Modelo Diagramático que presenta y explica las diversas características lineales y sistémicas en un modelo metodológico hipotético.

Palavras-chaves: Método, Desarrollo de Producto, Modelo Lineal, Modelo Sistémico

A METHOD OF R&D ELECTRONIC PRODUCT FOR APPLICATION BY INDEPENDENT ENGINEERS, DESIGNERS AND INVENTORS

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This paper describes a method for research and development (R&D) of electronic product for use by independent engineers, designers and inventor. The method was under continuous development and optimization from 1980 to 2008 and the concept is based on the analysis and synthesis of 13 product development methodological models. The method was originally proposed to suit the needs of a small company engaged in research, development and production of industrial electronic audio processing products for Radio Broadcasting Stations. The method was optimized with the assistance of Researchers from the Center of Technological Innovation of the Vale do Paranhana - one of a series of such Centers established by the Program of Technological Innovation promoted by the Government of the State of Rio Grande do Sul in Brazil. As a result, a method was obtained particularly suitable for utilization by independent engineers, designers and inventors to facilitate the creative process and increase efficiency in the design of new products, and especially to ensure that the incorporation of these elements results in more innovative and competitive products.

Palavras-chaves: Product design, product development, innovation, R&D

SIMILARITIES AND DIVERGENCES IN THE NEW PRODUCT DEVELOPMENT PRACTICES: COMPARING TECHNOLOGY-BASED COMPANIES IN THE MEDICAL DEVICE AND PROCESS CONTROL AUTOMATION DEVICE INDUSTRIES

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The small and medium Technology-based Companies (TBCs) are associated with innovative products. The objective of this paper is to identify and compare practices which influence the success of NPD projects in two industries: medical device industry (MD) and process control automation device industry (PCAD). A conceptual model of the relationships among the variables affecting new product performance was tested to help identify the critical factors in these industries. The model considers the factors: new product innovation degree, product advantage, marketing skills, sources of technology, company skills, project leader skills, cross-functional integration, NPD teams' organization method and NPD process proficiency. The analysis is based on a survey of 104 new product projects in 62 companies. Divergences and similarities and between the industries studied can be identified in the results. The critical success factors in MD companies are related to the organizational characteristics of the company, such as proficiency in NPD and marketing. The critical success factors in PCAD companies were related to the characteristics of the products, the degree of innovation incorporated in the new product and the capability of the company to analyze the targeted market. The results will be helpful for guiding management actions, as one way to improve NPD performance in both industries.

Palavras-chaves: New Product Development, Technology Based Companies, Medical Device Industry, Process Control Automation Device Industry

**SESSÃO TEMÁTICA INTERNACIONAL 08:
Sala Zélia Gatai I - Dia 08 de outubro de 2009 - das 16h30 às 18h30**

**INQUIRY OF AN ACCIDENT IN A CONSTRUCTION SITE AS
SUPPORT TO PREVENTIVE ACTION - TI_ST_105_699_13664**

*Bianca Maria Vasconcelos-Silva (UPE/FMR)
Béda Barkokébas Junior (UPE/FMR)*

**ERGONOMICS IN THE DESIGN OF PROCESS CONTROL SYSTEMS
DIGITAL INTERFACES - TI_ST_094_638_12611**

*Paulo Victor Rodrigues de Carvalho (CNEN/IEN)
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Isaac Luquetti dos Santos (CNEN/IEN)*

**AN INTERDISCIPLINARY APPROACH TO MODELING RESILIENCE
IN AN EMERGENCY HEALTH SERVICE - TI_ST_094_639_13699**

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Fábio Roberto Lapolli (ufrj)
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**THE CONSTRUCTION OF DEMANDS IN THE NURSE JOB: A STUDY
OF ABSENTEEISM IN THE ADMISSION AREA OF A UNIVERSITY
HOSPITAL - TI_ST_094_639_13771**

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Roseane Rodrigues da Silveira (GREPE/UFRN)
Samira Yusef Araújo de Falani (UFRN)
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**ANALYSIS OF ERGONOMIC DEMANDS RELATED TO THE
INADEQUATE USE OF INDIVIDUAL PROTECTION EQUIPMENT
(IPE): A CASE-STUDY IN THE RADIOLOGY SECTOR OF A
HOSPITAL - TI_ST_094_639_13858**

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**INFRARED SPECTROSCOPY APPLIED TO DEVELOPED OF
CLEAN TECHNOLOGIES TO ANALYZE HYPERGLYCEMIC DRUGS
- TI_ST_099_667_13986**

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Marco Flôres Ferrão (UNISC)
João Carlos Furtado (UNISC)
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**ANALYSIS OF ERGONOMIC DEMANDS IN THE BREAD MAKING
SECTION OF A BAKERY IN NATAL/RN: A CASE STUDY -
TI_ST_094_639_13738**

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ERGONOMICS IN THE DESIGN OF PROCESS CONTROL SYSTEMS DIGITAL INTERFACES

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Nuclear power production is a safety-critical process where ultimate execution of process change decisions lie with the operators. Thus it is important to provide the best possible decision support through effective supervisory control operator interfaces. This requires an ergonomics approach in the modernization of analog instrumentation and control systems of the existing nuclear power plants. In this article, using cognitive task analysis (CTA) approach, we observed operators working on an advanced control room of a nuclear power plant digital simulator and noted several opportunities for improvement in the human/system interfaces related to the graphics design and alarm systems. A redesigned prototype was constructed as an alternative to the current simulator screens. The design improves upon the graphical layout of system information and provides better integration of the alarm system. The design was validated by expert opinion and a scenario-based comparison. We claim that the use of ergonomics in the design of process control systems throughout the industry presents many opportunities for improvements with regard to system effectiveness, efficiency, reliability and safety.

Palavras-chaves: Interface design, Nuclear power plant operation, Cognitive task analysis

AN INTERDISCIPLINARY APPROACH TO MODELING RESILIENCE IN AN EMERGENCY HEALTH SERVICE

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Emergency services for pre-hospital attendance are designed to provide quick mechanisms for medical care. In general, these services have some kind of computational system to support task execution and to register the data. However, in many situations, technology can not meet the actual service needs. Thus, as a way to circumvent the system's constraints, the workers involved in service deploy a range of adaptive tasks. This work presents an interdisciplinary approach to identify problems in the information system used in a pre-hospital attendance office, together with the resilience and fragilities, added by people activities to cope with system constraints and demands.

Palavras-chaves: resilience, process modeling, cognitive task analysis, emergency health care

ANALYSIS OF ERGONOMIC DEMANDS IN THE BREAD MAKING SECTION OF A BAKERY IN NATAL/RN: A CASE STUDY

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The current article describes the instruction methodology of demand based on Ergonomic Analysis of work applied to the Bread production section of a bakery in Natal/RN, with the particularity of being an artificial demand. From hypothetical demands, managerial demands, workers null and latent demands it was created an ergonomic demand related to the disuse of the practices of work hygiene and security practices of work hygiene and security and the Good Manufacturing Practices (GMP's), thus risking physical and mental integrity of operators and also the quality of final product. The study of the theoretical and practical references in the Baker sector was fundamental to construct the hypothesis of demand in order to build the methodological instruments to be used in the understanding of the work. The analysis of the activity and the task as well as the perception of the variables and regulation mechanisms being used to keep production were very important to understand the activity and the risks to which most workers are exposed and the decrease in the quality of the product.

Palavras-chaves: Demands, ergonomics, bread making, health and worker security

THE CONSTRUCTIN OF DEMANDS IN THE NURSE JOB: A STUDY OF ABSENTEEISM IN THE ADMISSION AREA OF A UNIVERSITY HOSPITAL

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The first step in the ergonomic analysis of work (Wisner, 1987; Guérin, 2001; Vidal, 2008), which is the methodology used in this paper is to formulate demand hypothesis as well as the analysis of work situation in order to implement the ergonomic action. The current paper aims to apply the demand instruction step to a team of nurses in a University Hospital in order to minimize their poor work conditions and their effects to the health of the professionals. The study was based on a demand caused to assess pre formulated demand hypothesis and to observe managerial issues in labor activity. From the confrontation of demands, the high level of absenteeism in the admission sector was considered an ergonomic demand. Absenteeism is shown as both a generator and a result of a cycle of precarization in the health of workers.

Palavras-chaves: Demands, Ergonomic Analysis of work, Absenteeism, Nurse

ANALYSIS OF ERGONOMIC DEMANDS RELATED TO THE INADEQUATE USE OF INDIVIDUAL PROTECTION EQUIPMENT (IPE): A CASE-STUDY IN THE RADIOLOGY SECTOR OF A HOSPITAL

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This paper reports a case study developed in the radiology sector of a hospital in Natal- RN with the aim to carry a survey on its ergonomic demands, as well as to identify which activity determiners are operating in this area. In order to perform such task it was used a methodology based on ergonomic analysis of work - AET (Guerin, 2001; Vidal, 2008; Wisner, 1987). The research was developed in a participative way through situated observation of the work activity, conversational action and verbalization. It also stems from a preliminary theoretical research which pointed hypothesis of demand. The results show the factors which have negatively influenced the security of operators, such as: disuse of individual protection equipment; vast amount of defected images generated which leads to re-work, thus increasing the exposure of workers and patients; inadequate space in the dark room and in the Record room. The lack of correct isolation in the areas; physiological harm caused by heavy weight of IPE's. The aim of this paper is to identify the disuse determiners or the inadequate use of IPE's by operators in the area o radiology. Improvements were recommended in the organization of work, following radioprotection rules, making operators more aware of risks and prevention during their training sessions, the previous explanation to patients about the exam and the relationship with patients.

Palavras-chaves: radiology, ergonomic demands, work ergonomic analysis, occupational security, IPE

INFRARED SPECTROSCOPY APPLIED TO DEVELOPED OF CLEAN TECHNOLOGIES TO ANALYZE HYPERGLYCEMIC DRUGS

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Infrared techniques, particularly infrared reflectance spectroscopy associated with multivariate analysis presents great potential to evaluate pharmaceutical formulations and permit to developed of technologies to analyze pharmaceutical products for pharmaceutical industry, which has been trying to aggregate the advantages of the so called 'Green Chemistry' and the consequent decrease of pollutant emissions to the environment. In this work 11 glibenclamide samples were used and their spectra acquired in the 4000 - 650 cm⁻¹ range by Diffuse Reflectance Infrared Fourier Transform Spectroscopy (DRIFTS). The multivariate analysis algorithms used were Hierarchical Cluster Analysis (HCA) and Principal Component Analysis (PCA). The HCA algorithm allowed the identification of 4 groups constituted by the sample spectra studied. The application of HCA and PCA multivariate analysis techniques to the data obtained by DRIFTS have been efficient to develop simpler, faster and non-destructive methodologies to analyze pharmaceutical tablets formulations containing glibenclamide, highlighting the potentialities of these techniques to control and inspect industrialized medicines.

Palavras-chaves: Clean Technologies, infrared, multivariate analysis, pharmaceutical formulations.

INQUIRY OF AN ACCIDENT IN A CONSTRUCTION SITE AS SUPPORT TO PREVENTIVE ACTION

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There is a diversity of variables which can be connected to an accident, making the inquiry process, complex, and in accordance with a great deal of information accumulated at the company. Considering the human and economic costs caused by the accident, one can state that the inquiry of the causes of an accident may be comprehended as an opportunity to organizational learning. The aim of this work is to analyze an accident occurred in a construction site, in order to evidence the importance of the system of management in safety and health at work in the prevention of employment-related accidents. The study has consisted in an inspection of the place, collection of the company system of management in safety and health at work pointers, meetings with the mandates of the company and collection of depositions of employees and the victim's relatives. One has observed that, even characterizing a fortuitous event, the accident has provoked several direct and indirect costs to the company. One emphasizes, therefore, safety at work and the worker's health shall be seen as an investment, as a 'business' to organization, embracing activities which involve the human being as a whole, either at work, at home, in the transportation or the leisure.

Palavras-chaves: Accident at work. Management System in Safety and Health at Work. Civil Construction.

**SESSÃO TEMÁTICA INTERNACIONAL 10:
Sala Zélia Gatai II - Dia 08 de outubro de 2009 - das 16h30 às 18h30**

**ESTRATÉGIA DE ENVOLVIMIENTO DE CLIENTES EN EL
PROCESO DE DESARROLLO DE PRODUCTOS: REVISIÓN
ESTRUCTURADA, ANÁLISIS Y CLASIFICACIÓN BIBLIOGRÁFICA -
TI_ST_095_646_13652**

Mario Orestes Aguirre González (UFES)
José Carlos de Toledo (UFSCar)
Pedro Carlos Oprime (UFSCar)
Manuel Salomon Salazar Jarufe (UFES)

**INTEGRATION OF STRATEGIC PLANNING OF PRODUCT DESIGN
WITH SUPPLY CHAIN MANAGEMENT - TI_ST_095_646_13052**

Andrea C. dos Santos (UFS)
Fernando Antonio Forcellini (UFSC)
Rafael Ernesto Kieckbusch (UFSC)

**MODEL OF DEVELOPMENT OF NEW PRODUCT -
TI_ST_095_646_12772**

Marconi Freitas da Costa (UFPI)

**THE USE OF DESIGN OF EXPERIMENTS TO IMPROVE QUALITY IN
A CASTING PROCESS - MOLD PAINTING CASE STUDY -
TI_ST_095_647_13113**

Christian Egidio da Silva (ITA/GERDAU)
Luiz Carlos Silidônio Júnior (GERDAU)
Carlos Leandro Leite Pereira (GERDAU)
Amir Rivarolli Júnior (GERDAU)

**THE USE OF FACTOR ANALYSIS TO MEASURE PERCEPTIONS OF
CONSUMERS THE MOST RELEVANT FACTOR IN PRODUCT
PACKING AT THE TIME PURCHASING - TI_ST_106_710_13600**

Nara Stefano (UFSM)
Leoni Pentiado Godoy (UFSM)

**ANALYSIS OF THE PRODUCTIVE SECTOR OF AN ALUMINUM
COMPANY BY THE INITIAL ENVIRONMENT DIAGNOSIS FROM ISO
14001 AND BY THE CONCEPT OF CLEANER PRODUCTION: A
CASE STUDY - TI_ST_099_667_12485**

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Alexandre Borges Fagundes (UTFPR)
Paulo Cesar Machado (UTFPR)
Ivanir Luiz de Oliveira (UTFPR)
Luciano Scandelari (UTFPR)

**DIFFERENT T-NORMS FOR DEA-FUZZY EFFICIENCY
COMPUTATIONS - TI_ST_096_649_13447**

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MODEL OF DEVELOPMENT OF NEW PRODUCT

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Present a model of development of new products, with the intention of facilitating this process of development for the companies. From the searched literature it was adopted a prescriptive model of development of products as base for the proposed model. As a result of the research, it was proposed a model of development of new products composed of 10 stages, starting with the stage of identification of the necessities of the targeted public, going until the last stage that refers to the launching of the product in the market. The importance of this article is in the possibility of the companies to be able to increase its chances of success at the moment of developing a new product or service and to launch it in the market, searching to keep constant contact with this last one.

Palavras-chaves: Development of New Products, Quality and Innovation.



INTEGRATION OF STRATEGIC PLANNING OF PRODUCT DESIGN WITH SUPPLY CHAIN MANAGEMENT

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Both the design of the supply chain and of new products undergo strategic analysis, however, few studies develop simultaneous relations between the product design strategies and the supply chain. In general, similarly to the process design,, the supply chain tends to be addressed after the product design. The objective of this paper is to present the strategic planning phase of a product of a reference model for the product development process in an SCM environment. This proposal has been evaluated by both academic and company specialists. As a result the importance of the integration of technical knowledge of the product design for decision making in the supply chain management is observed.

Palavras-chaves: supply chain management, strategic product planning, reference model

ESTRATÉGIA DE ENVOLVIMIENTO DE CLIENTES EN EL PROCESO DE DESARROLLO DE PRODUCTOS: REVISIÓN ESTRUCTURADA, ANÁLISIS Y CLASIFICACIÓN BIBLIOGRÁFICA

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Este trabajo objetiva presentar una revisión, clasificación y análisis bibliográfico sobre el tema involucramiento de clientes en el Proceso de Desarrollo de Productos (PDP). La investigación tuvo como punto de partida la búsqueda de artículos en el portal de la CAPES para después proseguir en otras fuentes conforme el criterio snowball, obteniéndose artículos de las bases de datos Science Direct, Proquest, Ebsco, IEEE, BlackWell Sinergy y otros artículos obtenidos de sus propios autores. Fueron encontrados 72 artículos. Considerando el periodo de publicación de los artículos, se concluye que el interés por el tema aumentó significativamente en los últimos años. Llevando en consideración el área de conocimiento del tema, se percibe la multidisciplinariedad de sus autores, con mayor publicación de investigadores del área de conocimiento "Gestión de Innovación Tecnológica". Los tópicos que predominan en los artículos encontrados son: fundamentos para el involucramiento del cliente en el PDP, criterios para selección de los clientes, tipos de interacción fabricante-clientes y beneficios obtenidos por la empresa fabricante y los clientes en la práctica del trabajo en conjunto.

Palavras-chaves: Revisión estructurada de la bibliografía, desarrollo de productos, involucramiento del cliente

THE USE OF DESIGN OF EXPERIMENTS TO IMPROVE QUALITY IN A CASTING PROCESS - MOLD PAINTING CASE STUDY

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The present work was developed to understand the influence of raw material on the properties of one specific dressing type used in a casting process in order to improve its quality. This kind of painting is used to protect the metallic mold during the casting process against damages and to control the metal cooling inside the mold. After knowing the real influence of each material it is possible to define the best process parameters in order to become the process more efficient and strong. It was applied a design of experiments with three factors and three levels to optimize the tests. The proportion of zirconium silicate (refractory constituent), aluminum monophosphate (bond-activating agent) and sodium bentonite (bonding material) were changed. The following tests were performed: suspension, viscosity, density and pH. The results showed that zirconium silicate and sodium bentonite present, in general, the same behavior in terms of viscosity - measured by density, flowing time and suspension. Aluminum monophosphate presents an opposite behavior in relation to sodium bentonite and zirconium silicate. The addition of sodium bentonite contributes to the viscosity increasing, potentiating the effect of zirconium silicate. Aluminum monophosphate influences on the acidity of material too much. The addition of sodium monophosphate reduces the viscosity. The individual effect of zirconium silicate and sodium bentonite is minimized by the aluminum monophosphate. The results suggest that the suspension test isn't an adequate practice to evaluate the painting viscosity because it could induce to a wrong understanding of results.

Palavras-chaves: DOE, Casting, painting, zirconium silicate, aluminum monophosphate, sodium bentonite

DIFFERENT T-NORMS FOR DEA-FUZZY EFFICIENCY COMPUTATIONS

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Interval DEA frontiers are here used in situations where one input or output is subject to uncertainty in its measurement and is presented as an interval data. We built an efficient frontier without any assumption about the probability distribution function of the imprecise variable. We take into account only the minimum and the maximum values of each imprecise variable. Two frontiers are constructed: the optimistic and the pessimistic ones. We use fuzzy relationships to introduce a new efficiency index based on a set of some Fuzzy T Norms. We will explore only the case where only one single variable presents a certain degree of uncertainty.

Palavras-chaves: Data envelopment analysis, Fuzzy sets, Interval data

ANALYSIS OF THE PRODUCTIVE SECTOR OF AN ALUMINUM COMPANY BY THE INITIAL ENVIRONMENT DIAGNOSIS FROM ISO 14001 AND BY THE CONCEPT OF CLEANER PRODUCTION: A CASE STUDY

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The application of environmental concepts is growing in importance when organizations sustainability is considered and the Environmental Management Systems are useful tools for better use of these concepts. So, this article aimed to give examples of ISO 14001 application, considering Initial Environmental Diagnosis, in a production sector of a aluminum recycling company in city of Ponta Grossa, Paraná state. The environmental aspects and impacts were focused, as well the potential improvement detected in the whole production process. This them is in context due to the evolution of environmental trends and it is realized a bibliographical review about ISO 14001 and the Cleaner Production concept. Finally there is the analysis about the case study, what assures that the application of this Environmental Management System can improve the economic area of the organizations and help in a decisive way the environment preservation.

Palavras-chaves: ISO 14001; Cleaner Production; Environmental Diagnosis.

THE USE OF FACTOR ANALYSIS TO MEASURE PERCEPTIONS OF CONSUMERS THE MOST RELEVANT FACTOR IN PRODUCT PACKING AT THE TIME PURCHASING

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The product cannot be planned separate from packing and, should not be defined only with base of engineering, marketing and communication or economic. The packings industries are using to advantage of this opportunity to differentiation its products, perceiving the packing to be pretty is not enough, inviolable or preserving the flavor and freshness foods. The packing concept of is increased. The packing won status of product, able to share the same language convenience where it goes. This study aims is to analyze the perception of consumers point of view, most important factors in product packing at the time purchasing. The data were processed using software Statistica and SPSS (Statistical Package Social Sciences).

Palavras-chaves: Packing, factor analysis, product

**SESSÃO TEMÁTICA INTERNACIONAL 15:
Sala Gregório de Matos - Dia 09 de outubro de 2009 - das 08h00 às
10h00**

**SUSTAINABILITY - A STRATEGY IN THE TECHNOLOGY OF
INFORMATION AND COMMUNICATION. - TI_ST_098_664_12569**
NELSON LUIZ ROCHA SILVEIRA (PPEGC/UFSC)

**GESTÃO DO CONHECIMENTO ALIADA AOS PRINCÍPIOS DA
GESTÃO DA QUALIDADE - TI_ST_098_664_14043**
Ângela Patrícia Linard Carneiro (CENTEC)
Elisabeth de Amorim Coelho (CELENE)

**WIND POWER: A PROMISE OF CLEAN ENERGY IN BRAZIL -
TI_ST_099_666_13319**
Ricardo Moreira da Silva (UFPB)
José Reinaldo de Queirós (UFPB)

**ANÁLISIS DE LAS POSIBILIDADES PARA LA GENERACIÓN DE
ENERGÍA A TRAVÉS DE BIOMASA GENERADOS POR PINUS
ELLIOTTII Y PINUS TAEDA ENTRE 9 AÑOS Y 10 AÑOS -
TI_ST_099_666_13256**
Angelo Marcelo Tusset (UnC)
Marcos dos Santos Weiss (UnC)
Pedro Luiz de Paula Filho (UnC)
Peterson Jaeger (UnC)

**SEARCHING FOR SUSTAINABLE ENERGY: A NEW ANALYTICAL
MODEL - TI_ST_099_666_12793**
Ricardo Moreira da Silva (UFPB/KTH)
Marcos André Mendes Primo (UFPE)
Maria Fernandes Gomes (KTH)

**REGULATION OF UNITIZATION REGARDING OIL AND NATURAL
GAS EXPLORATION IN BRAZIL - TI_ST_099_666_12511**
FELIPE ALVITE VAZQUEZ (UFRJ)
Moisés Espíndola da Silva (UFRJ)
Rosemarie Broker Bone (UFRJ)



SUSTAINABILITY - A STRATEGY IN THE TECHNOLOGY OF INFORMATION AND COMMUNICATION.

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This article intends to show that, in the processes of management for the construction of Information Technology and Communications, sustainability can be a strategy so that the blanks between the necessary technological jumps for the evolution of the information society can be shortened.

*Palavras-chaves: Information Technology and Communications;
Sustainability; Strategy. Engineer and Knowledge Management.*



GESTÃO DO CONHECIMENTO ALIADA AOS PRINCÍPIOS DA GESTÃO DA QUALIDADE

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Quando a qualidade e o conhecimento organizacional possuem uma gestão que os concilia, objetivando a manutenção da competitividade da instituição, geram confiabilidade, credibilidade e respeitabilidade elevando a reputação organizacional. Pondo em destaque a qualidade e o conhecimento, este trabalho faz a correlação entre a gestão do conhecimento, através de dois modelos e os princípios da gestão da qualidade, apontando as congruências existentes entre ambos. Observa-se que os princípios da qualidade e a gestão do conhecimento repercutem nos processos e negócio da organização favorecendo um melhor desempenho e satisfação dos clientes.

Palavras-chaves: Modelos de Gestão do Conhecimento; Gestão do Conhecimento; Princípios da Qualidade.

REGULATION OF UNITIZATION REGARDING OIL AND NATURAL GAS EXPLORATION IN BRAZIL

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In Brazil, the withdrawal of 41 blocks from the 9th Bidding Round by the Brazilian Oil Regulatory Agency (ANP) raised questions about the possible unitization of oil fields, particularly of the subsalt layers and also about the likelihood of future litigation between companies and the Brazilian Government. Based on the international experience of Nigeria and of East Timor/Australia, we propose improvements to the Brazilian law on the issue (Law 9478/97, article 27). We conclude that a clear and specific regulation on unitization should be passed, so as to protect investors and the non-renewable resources at stake (oil and gas).

Palavras-chaves: Brazil, oil and gas litigation, subsalt layer, international experience.

SEARCHING FOR SUSTAINABLE ENERGY: A NEW ANALYTICAL MODEL

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The high average consumption of electric power in a country means that the population reached a higher development level than those who has lower level of consumption. The warm and adequately-lit home is considered a basic need, together wiith access to energy-consuming appliances ranging from the fridge to the TV. Actually, everyone should have access to this energy to heat and illuminate their lives, enabling survival, study, health and leisure at acceptable cost. Behind the access there is the question of energy production. When this production doesn't change the climate, flora and fauna, then we say that this is sustainable energy.. Even in developed countries like UK, yet low incomes, energy-inefficient housing and appliances mean that about 10 per cent of UK households fail to attain this basic standard. When we studied other countries around the globe we observe that many people still live without energy. The purpose of the current paper is to present the approach about energy in view of sustainability. We develop an analytical model for sustainable energy using basically two theoretical concepts: the Laws of thermodynamics and the McDonough and Braungart fractals model, which involves equity, ecology and economy. After presenting the new model, we tested using the data collected from more than 250 papers in selected European journals between the years 2006 and 2008 (however for reasons of space, here we present only the analysis of nuclear and hydropower). We see the model works and concluded the most sustainable energy is still nuclear power, despite the common sense not to say that. It has volume production, the cost acceptable, on short-term is not limited to material and does not contribute to the greenhouse effect.

Palavras-chaves: Energy Policies, Sustainable Energy, Sustainability

ANÁLISIS DE LAS POSIBILIDADES PARA LA GENERACIÓN DE ENERGÍA A TRAVÉS DE BIOMASA GENERADOS POR PINUS ELLIOTTII Y PINUS TAEDA ENTRE 9 AÑOS Y 10 AÑOS

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El objetivo del trabajo es proporcionar información para subsidiar los gestores públicos y privados en la toma de decisiones estratégicas para mejorar rendimiento competitivo. El creciente interés en el uso de la biomasa en las plantas de generación de energía, está impulsando las investigaciones sobre los procesos que intervienen en la conversión de la biomasa. La investigación en Brasil en el sector de las fuentes de energía alternativas se han desarrollado con el objetivo de diversificar la matriz energética brasileña, reducir la dependencia de los combustibles fósiles y contribuir a la reducción de las emisiones de gases de efecto invernadero. El conocimiento del potencial y la versatilidad de la madera como fuente de combustible es un requisito previo para el análisis económico de proyectos con participación de la conversión o la utilización de los bosques para la producción de energía. Con el objetivo de examinar el potencial de generación de biomasa para la generación de energía, mediante el cultivo de pino en la meseta norte catarinense en el Brasil se han obtenido modelos matemáticos para estimar el peso de la madera seca, madera verde, la densidad, la media de DAP, la masa de cada árbol, calorífero poder de cada árbol, y la distribución de probabilidad de las clases de diámetro de Pinus elliottii y Pinus taeda, con

Palavras-chaves: modelos de regresión, biomatemática, biomasa, modelos matemáticos, dendometria

WIND POWER: A PROMISE OF CLEAN ENERGY IN BRAZIL

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In this article we present the wind power as renewable energy and discuss the benefits and difficulties of its use in Brazil. It is an exploratory study since there are many studies on the technology of generating energy through wind, but there are little discussion about the benefits and impacts of its use applied to Brazil. Thus, to support the theoretical basis, we adopted the approach of survey and we seek in Science Direct all articles written between 2007 until now in Europe to set up theoretical knowledge base. The data collection was made in other journals and websites to close the gaps of each topic and make a direct application to Brazil. Thus, this paper is a survey on the use and prospects of wind energy in Brazil. After a short theoretical introduction involving the issue of sustainable energy, our method was to describe the prospects for use in growth, benefits of using wind power and need for appropriate policies, when considering its use in Brazil. We conclude that despite many difficulties today, the Brazilian government began to organize to take more consistent actions to promote the development of the promising wind sector.

Palavras-chaves: Wind Power; Sustainable; Use in Brazil

**SESSÃO TEMÁTICA INTERNACIONAL 11:
Sala Zélia Gatai I - Dia 09 de outubro de 2009 - das 14h00 às 16h00**

**GROUP TECHNOLOGY APPLIED IN THE PRODUCTIVE PROCESS
OPTIMIZATION OF FISH INDUSTRY - TI_ST_096_649_13733**

*Gislene Salim Rodrigues (UTFPR)
Rogério Malta Branco (FURG / UFSC)
Leandro Cantorski da Rosa (UFSM)
Antônio Sérgio Coelho (UFSC)*

**AN APPROACH FOR RANKING COUNTRIES BASED ON DATA
ENVELOPMENT ANALYSIS WITH MULTIPLE INPUTS AND
OUTPUTS: THE PAN-AMERICAN GAMES - TI_ST_096_650_14240**

*Fernanda Rodrigues dos Santos (UFF)
Lidia Angulo Meza (UFF)*

**PROPOSED PROCEDURE FOR ESTABLISHING THEORETICAL
REFERENCE - APPLICATION TO KEY PERFORMANCE INDICATORS
(KPIs). - TI_ST_096_650_13262**

*William Barbosa Vianna (UFSC)
Edilson Giffhorn (UFSC)
Leonardo Ensslin (UFSC)*

**PERFORMANCE ANALYSIS OF NETWORKS OF OPEN ZERO-
BUFFER MULTI-SERVER QUEUES - TI_ST_096_651_14490**

Frederico R. B. Cruz (UFMG)

**CONTROL ÓPTIMO APLICADO EN EL MODELO DEPREDADOR-
PRESA DE LOTKA-VOLTERRA: APLICACIÓN EN EL CONTROL
BIOLÓGICO DEL ÁCARO PANONYCHUS ULMI -**

TI_ST_096_652_14066

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**ANALYSIS OF AUTOCORRELATION DATA OF PERFILAGEM
THROUGH OF THE CORRECTIVE MEASURE -**

TI_ST_096_652_13568

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GROUP TECHNOLOGY APPLIED IN THE PRODUCTIVE PROCESS OPTIMIZATION OF FISH INDUSTRY

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The necessity of constant quality improvement in products and services requires the industries of manufacture an improvement concerning the abilities to process different products, given the requirements of a competitive market. With the intention of optimizing the procedure of fish manufacturing process by the Group Technology (GT) the Production Flow Analysis (PFA) methodology was used, by means of the study of the Factory Flow Analysis (FFA), Group Analysis (GA), and Line Analysis (LA). Initially, by the use of the FFA, the productive process of the plant is decomposed in departments and later, machines are allocated to them. Later on, applying GA, fish families and groups of productive resources are created (machines, staff, and tools), where each family will be processed by an only group. The best cell groupings derive from heuristics based on evolutionary computation: genetic algorithms. Finally, the LA defines the layout sequence for the productive resources inside each technological cell. Therefore, the proposed methodology allows the procedure of fish manufacturing process to optimize by means of cell arrangement, resulting in higher productivity and quality in the manufacture processes, going beyond the focus on traditional proposals common to metal-mechanics through its employment in agro-industrial systems.

Palavras-chaves: Group Technology, Production Flow Analysis, Manufacturing Cells.

PROPOSED PROCEDURE FOR ESTABLISHING THEORETICAL REFERENCE - APPLICATION TO KEY PERFORMANCE INDICATORS (KPIs).

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The aim of this paper is to provide a debate on the initial aspects of research methodology, that is, the determination of Theoretical Reference updated and proposes a structured process for this determination, illustrating the proposal regarding Key Performance Indicators (KPIs). From a universe of 8,780 articles surveyed in 15 databases, 35 articles were identified that need to be read in full.

Palavras-chaves: Theoretical Reference; Key Performance Indicators, Research Methodology

AN APPROACH FOR RANKING COUNTRIES BASED ON DATA ENVELOPMENT ANALYSIS WITH MULTIPLE INPUTS AND OUTPUTS: THE PAN-AMERICAN GAMES

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The quasi-official classical ranking made for the countries participating in the Olympic Games or other World Games are said to be unfair for many. Specifically, for over rating the gold medal: a country with one gold medal is better ranked than any other with only silver medals despite the amount. As a consequence many approaches have been proposed to better rank these countries. Among these different approaches, it has been used Data Envelopment Analysis - DEA models to built rankings. Most of these models take into account only the medals won in the Games using a weight restrictions DEA model. These weight restrictions account for the importance of the gold, silver and bronze medals. In this approach, we proposed a model that also takes into account Gross Domestic Product and Population as a proxy for the investment that each country makes to participate in the Games. This new approach is used to rank the countries participating in the Pan-American Games. However, it can also be used to build a ranking for the countries participating in the Olympics and other World Games.

Palavras-chaves: DEA, Ranking, weight restrictions, Investments in sports, Pan-American Games

PERFORMANCE ANALYSIS OF NETWORKS OF OPEN ZERO-BUFFER MULTI-SERVER QUEUES

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In this paper we aim to accurately evaluate the performance of open zero-buffer multi-server general queueing networks. The measure of interest is the throughput, which is evaluated by mean of a well-know tool, the Generalized Expansion Metthod (GEM). The GEM is a node-by-node decomposition method successfully used in the past to approximately evaluate the performance of finite queues. We compare the results provided by the GEM with those of simulation. Our experiments attest for the quality of the GEM. A wide range of testing instances was analyzed, including different basic topologies. For all cases tested, the errors were below 16%, which is quite satisfactory for optimization purposes, to be carried out in the next step of this research.

Palavras-chaves: Finite queues, bufferless queues, performance evaluation.



ANALYSIS OF AUTOCORRELATION DATA OF PERFILAGEM THROUGH OF THE CORRECTIVE MEASURE

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This article aims at to present a method for models with data that have serial correlation. The used data are the profiles of wells of oil of the Basin Sedimentary Sergipe-Alagoas, the acquired information will be excellent for the construction of statistical models, that can establish estimates of the seismic speeds of the rocks throughout the wells. The result showed that the choice of the iterative method of Cochran-Orcutt, for the estimative through squared minimums generalized was efficient to remove the serial correlation, what it was not possible for the estimative through squared minimums usual. The found model had an mape of 18,20%. This research is supported by CNPq and FAPITEC.

Palavras-chaves: Synthetic sonic profile, Multiple Regression , Serial correlation

CONTROL ÓPTIMO APLICADO EN EL MODELO DEPREDADOR-PRESA DE LOTKA-VOLTERRA: APLICACIÓN EN EL CONTROL BIOLÓGICO DEL ÁCARO PANONYCHUS ULMI

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En este trabajo se obtuvieron los modelos matemáticos que permiten determinar el valor de los coeficientes para el modelo de presa-depredador Lotka-Volterra, teniendo en cuenta el sistema ácaro Panonychus ulmi y su depredador, el ácaro Neosseiulus californicus. Obtención de los parámetros del modelo depredador-presa de Lotka-Volterra, así como los valores de las simulaciones computacionales se obtuvieron a través de búsqueda bibliográfica que considero el control del ácaro P. ulmi a través de uso del ácaro N. californicus, analizándose el ciclo de vida de los ácaros, su alimento natural y la estabilización entre las dos especies. Con el uso de depredador-presa en un modelo lineal fue posible resolver el problema de control óptimo para sistemas lineales con cuadrático funcional, obteniendo así un control para el modelo lineal no lineal presa-depredador utilizado. La simulaciones por ordenador muestran la eficacia de la estrategia de control en el modelo matemático, lo que demuestra que los ajustes específicos a través del modelo matemático y el control propuesto se puede utilizar como una herramienta para la toma de decisiones en el control de ácaros P. ulmi.

Palavras-chaves: control óptimo, biomatemática, modelos matemáticos, simulación por ordenador y control biológico

**SESSÃO TEMÁTICA INTERNACIONAL 13:
Sala Zélia Gatai II - Dia 09 de outubro de 2009 - das 14h00 às 16h00**

**WHAT DIFFERENTIATES "MORE" AND "LESS" INNOVATIVE SMES?
- TI_ST_097_658_12806**

*Giancarlo Medeiros Pereira (Unisinos)
Miguel Afonso Sellitto (Unisinos)
Miriam Borchardt (Unisinos)*

**RISK STRATEGY IN AN ORGANIZATION IS NOT UNIFORM IN BUT
VARIES ACROSS ACTIVITIES: THE COMPANY'S CORE
COMPETENCIES AND COMPETITIVE ADVANTAGE AS THE MAIN
FACTORS INFLUENCING THE VARIATION IN RISK STRATEGY AND
GOODWILL - TI_ST_097_658_13299**

*MARLY CAVALCANTI (CEETEPS)
Madalena Oliveira Lima (CEETEPS)*

**THE ACHIEVEMENT OF THE SERVICES OF COOPERATIVES OF
ELECTRIFICATION IN BRAZIL: A PERSPECTIVE OF POWER AND
CONFLICT - TI_ST_097_658_12715**

Ricardo Moreira da Silva (UFPb/KTH)

**LOS STAKEHOLDERS DE INFLUENCIA DIRECTA EN EL
DESARROLLO DE LA RUTA TURÍSTICA DE UNA LOCALIDAD EN
LA SIERRA GAUCHA: UN ESTUDIO EXPLORATORIO -**

TI_ST_097_659_12499

*Gabriel Sperandio Milan (UCS)
Diogo Zapparoli Manenti (UCS)
Pelayo Munhoz Olea (UCS)
Eric Dorion (UCS)*

**PROPOSTA DE UM MODELO DE GESTÃO DA CADEIA DE
SUPRIMENTOS COM O APOIO DA TEORIA DAS RESTRIÇÕES, VMI
E B2B - TI_ST_097_659_12729**

*Reinaldo Fagundes dos Santos (ITA)
João Murta Alves (ITA)*

**METHODOLOGY TO MONITORING PRODUCTIVE ARRANGEMENT -
SIMAP - TI_ST_097_659_12911**

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Dmontier Pinheiro Aragão (UFC)
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THE ACHIEVEMENT OF THE SERVICES OF COOPERATIVES OF ELECTRIFICATION IN BRAZIL: A PERSPECTIVE OF POWER AND CONFLICT

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In this article we present a case study to discuss the process of regulation of cooperatives in electrification in Brazil, which in ancient times the regulation was based on Keynes ideas and they had received new direction for competition of neoliberals' approaches. To support the theoretical basis, we adopted the approach of systems of power, and especially appropriate in the model created by Mintzberg (1983) to understand the dynamics of the relationship between institutions involved a process of conflict. Data collection was made in federal laws, internal rules of each agency and also minutes of meetings between the Agency and 15 cooperatives (in states of Paraíba and Rio Grande do Norte). Infer the adoption is intentionally (because of unrestricted access to information), but data represent the entire cooperatives existing in the country (257). It is the type of action-research because the author had been in process since 2005, participating in the meetings between cooperatives and Agency. After a short theoretical introduction, our method was to describe the stakeholders of energy sector; report for case study then analyzed the power and conflicts, showing the critical framework created. We conclude that in process of change approaches, the energy regulatory agency (that have the mission to provide favorable conditions for the development of the market of electric energy occurs with a balance between the players and for the benefit of society), failed to conduct the process. The ANEEL have created so many laws, that the cooperatives cannot do everything on time. Thus, although the process has been made for the creation and permanence of new players and thus in theory, allow more competition, 80% of the cooperatives cannot adapt to the predatory market, and gradually transferred its services to Concessionaires. So is the reverse of expected.

Palavras-chaves: Cooperatives, ANEEL, Competition

WHAT DIFFERENTIATES “MORE” AND “LESS” INNOVATIVE SMES?

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The objective of this study is to identify differences between “More” and “Less” innovative small and medium sized enterprises (SMEs) in the manufacturing sector. The study focused on the early followers (companies that do not develop a neww technology, but try to identify one as soon as possible in order to offer a cheaper alternative to their customers). Ten case studies involving 5 SMEs classified as “More Innovative” and 5 classified as “Less Innovative” were designed. Companies were classified as “More Innovative” and “Less Innovative” according to their profits generated on products developed in the last five years. “More Innovative Companies” prospect more frequently than the “Less Innovative” SMEs. Fairs and places outside the sector of firms’ activity were also identified as sources of innovation not listed in the literature. “More Innovative Companies” seems to have fewer internal barriers to innovation as a result of a lower dependency of the owner to the prospecting of insights and to the implementation of changes.

Palavras-chaves: Innovation, SMEs, Knowledge

RISK STRATEGY IN AN ORGANIZATION IS NOT UNIFORM IN BUT VARIES ACROSS ACTIVITIES: THE COMPANY'S CORE COMPETENCIES AND COMPETITIVE ADVANTAGE AS THE MAIN FACTORS INFLUENCING THE VARIATION IN RISK STRATEGY AND GOODWILL

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A study case where none of the managers interviewed saw the difference between risk strategy formation and risk strategies per se, although they were presented with the proper definitions. They referred to the variation in risk strategy formation as representing variations in the risk strategies themselves. It should be noted that although variation in risk strategy across different business activities was contrary to our research hypothesis, it was considered by the managers to be prevalent. Following these reactions to the differentiation between strategy formation and strategy per se, we rephrased the question pertaining to the reasons for the variability in propensity to risk taking within organizations and goodwill values. Provides management with an incentive to recognize a greater proportion of tangible assets to provide greater assurance to shareholders of the availability of security, should the target firm fail, and that “aged” goodwill is not considered to be an asset by investors. So risk management and innovation is a total priority, in a time of crisis.

Palavras-chaves: Risk management; Goodwill; Strategy formation; Risk taking in the core activities

LOS STAKEHOLDERS DE INFLUENCIA DIRECTA EN EL DESARROLLO DE LA RUTA TURÍSTICA DE UNA LOCALIDAD EN LA SIERRA GAUCHA: UN ESTUDIO EXPLORATORIO

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El estudio tiene como objetivo central la identificación de los principales stakeholders de la ruta turística de la localidad de Ana Rech en Caxias do Sul - RS, y como objetivo secundario la evaluación de los medios de junción entre los principales stakeholders identificados, con base en el estudio de la práctica relacional de estos en la posible suposición de incremento de los negocios y mejoras en el desempeño global de la ruta. La metodología utilizada es la investigación cualitativa, por medio de la observación participante y de encuestas individuales en profundidad. Los datos colectados fueran sometidos al análisis de contenido. El resultado del estudio identifica cuales son los principales stakeholders de influencia directa en el desarrollo de la ruta turística analizada: un representante de la comunidad local, un representante del poder público, una entidad (sindicato) de clase y un agente de integración. Esto, contribuye para la actividad gerencial de la ruta a la medida que la gerencia de los grupos de interés y el fortalecimiento de las relaciones existentes pueden ser útiles para la consolidación y el desarrollo de la ruta turística a través de estrategias y acciones conjuntas entre los colaboradores.

Palavras-chaves: Stakeholders, relaciones, ruta turística.

PROPOSTA DE UM MODELO DE GESTÃO DA CADEIA DE SUPRIMENTOS COM O APOIO DA TEORIA DAS RESTRIÇÕES, VMI E B2B

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Este trabalho propõe um modelo para integração e gerenciamento da Cadeia de Suprimentos (SC) integrando ERP (Enterprise Resource Planning) através de um sistema APS (Advanced Planning and Scheduling). O modelo proposto utiliza, em um portall B2B (Business to Business), os conceitos do estoque gerenciado pelo fornecedor - VMI (Vendor-Managed Inventory) aliados à algoritmos da TOC (Theory of Constraints), que se incumbem através do APS de integrar e gerenciar a SC. O gerenciamento ocorre de forma participativa, onde as diversas empresas distribuídas ao longo da cadeia passam a atuar como uma entidade única. Com a combinação de fornecimento e demanda, a gestão será focada na busca de um aumento global e distribuída dos ganhos.

Palavras-chaves: APS; TOC; B2B; VMI; ERP; SCM; Cadeia de Suprimentos; Efeito Chicote

METHODOLOGY TO MONITORING PRODUCTIVE ARRANGEMENT - SIMAP

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It was observed that there aren't systems for monitoring the productive arrangements (PA). It is also very important because this monitoring indicate how the PAs are developing over the time. According to this preoccupation was developed a system to do this work based in management subsystems. It was identified seven subsystems that contemplate the management systems inside the organizations. When these systems are monitored, it can be observed where there are opportunities to improve all links of a PA. This system, immersed in an extremely dynamic market economy, allows a constant monitoring to proactively diagnostic problems from pre-defined indicators. The developed system is an innovative tool for managing PAs. The methodology is being tested in seven regional production chains and has shown promising results.

Palavras-chaves: Monitoring; Productive Arrangements; System; Management Tools.

**SESSÃO TEMÁTICA INTERNACIONAL 12:
Sala Zélia Gatai I - Dia 09 de outubro de 2009 - das 16h30 às 18h30**

**A MODEL FOR QUALITATIVE IT GOVERNANCE ANALYSIS -
TI_ST_097_655_13429**

*Rogério Feroldi Miorando (UFRGS)
José Luis Duarte Ribeiro (UFRGS)*

**O CONTEXTO ESTRATÉGICO DE INTERNACIONALIZAÇÃO DA
INDÚSTRIA DE CHARUTOS E CIGARRILHAS: O CASO MENENDEZ
AMERINO - TI_ST_097_655_13910**

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**TOWARDS A MODEL OF "PROCESS-ORIENTED" CORE
COMPETENCE MANAGEMENT - TI_ST_097_655_14032**

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**BRAZILIAN FAMILIAL COMPANY: CHANGES GENERATED BY THE
SUCCESSION PROCESS - TI_ST_097_655_13581**

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Fernando José Spanhol (UFSC)
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**THE IMPORTANCE OF ANALYSIS OF PRODUCTION SYSTEM
ENGINEERING-TO-ORDER AND MAKE-TO-STOCK IN TWO
BUSINESS SECTOR GRAPH - TI_ST_097_656_14683**

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**THE USE OF REFRACTORY WASTES ON THE SAND MOLDING
PROCESS AS AN ALTERNATIVE TO REDUCE RESIDUES
GENERATION - TI_ST_099_668_13226**

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**ORGANIZACION INTER-EMPRESARIAL DE EMPRENDEDORES
POST-FORDISTAS - TI_ST_097_657_13482**

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A MODEL FOR QUALITATIVE IT GOVERNANCE ANALYSIS

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This work shows an IT Governance analysis model employed on a Graduate Program. The research was conducted using individual semi-structured interviews. It enabled the discovery of complex and interrelated aspects not identified by quantitative methods. The interviews were useful for mapping Program's IT Governance and allowed the identification of deficiencies, potential improvements, and new business opportunities. The chief improvement opportunities identified by this work were: lack of IT formal principles, low participation of IT professionals in decision process, and use of IT for distance learning.

Palavras-chaves: Information Technology, IT Governance, Individual interviews, Qualitative research.



BRAZILIAN FAMILIAL COMPANY: CHANGES GENERATED BY THE SUCCESSION PROCESS

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This researched intended to analyze the perception of collaborators of a family enterprise on changes generated by the succession process. The analysis of organizational changes was based on Motta's (2001) perspectives. A qualitative descriptive research was done with interviews, documental analysis and case study. The data analysis qualifies mainly as qualitative descriptive and comprehensive. Verified during the process were a deficient or lack of internal communication, slow decision making, and double command or no command at all. In conclusion, to achieve the change goals a new outlook over intra-organizational integration will be necessary, in order to eliminate family business characteristics such as lack of dialogue which makes conflict solutions more difficult and imposed decisions that cause prejudice to the transposition of ideas to reality.

*Palavras-chaves: Familial Company; Succession Process;
Organizational Changes*

O CONTEXTO ESTRATÉGICO DE INTERNACIONALIZAÇÃO DA INDÚSTRIA DE CHARUTOS E CIGARRILHAS: O CASO MENENDEZ AMERINO

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O problema que motivou esta pesquisa foi o de entender o contexto estratégico de internacionalização da indústria de charutos e cigarilhas. Considerando isso, foram aplicados questionários que guiaram o estudo sob a perspectiva do Modelo dos Determinantes da Vantagem Competitiva Nacional. A estratégia metodológica de estudo de caso qualitativo foi considerada apropriada para esclarecer o problema de pesquisa e para investigar o processo e a dinâmica do fenômeno da internacionalização, em uma perspectiva longitudinal. Foram realizadas treze entrevistas com os seis respondentes que compõem a amostra. Utilizou-se o método de entrevistas semiestruturadas para a coleta de dados in loco, individualmente, com os sujeitos entrevistados. O objetivo deste artigo concentra-se em analisar os principais atributos estratégicos que favoreceram a internacionalização da empresa em estudo e os aspectos do contexto nacional e internacional que interagiram no processo de internacionalização da mesma.

Palavras-chaves: Estratégia, internacionalização, contexto estratégico, modelo diamante, charutos e cigarilhas

TOWARDS A MODEL OF “PROCESS-ORIENTED” CORE COMPETENCE MANAGEMENT

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The objective of this article is to outline a model of core competence management that is closely related to process-orientation. The methodology concerns exploratory research and philosophical conceptualization, since a conceptual model is formulated on the basis of a previous literature review (MEREDITH et al, 1993). The main references are the original proposition of core competences by Prahalad and Hamel (1990) and Hamel and Prahalad (1994) as well as several works on core competence management and process-orientation. Initially, the seminal idea of “core competence” is reviewed and models of core competence management are summarized and assessed, concerning the consideration of process-orientation. Thereafter, two frameworks of association among types of capabilities and processes are proposed, in order to support the following outline of a model of “process-oriented” core competence management. As a result, the offered frameworks and model show interrelationships among the processes and the core competences. With this perspective, actions related to the management of processes and of core competences might be clearly integrated and associated in the practice, helping to link process-orientation with strategic management.

Palavras-chaves: Core Competences, Core Competence Management, Process-Oriented, Process Management, Strategic Management

THE IMPORTANCE OF ANALYSIS OF PRODUCTION SYSTEM ENGINEERING- TO-ORDER AND MAKE-TO-STOCK IN TWO BUSINESS SECTOR GRAPH

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Organizations are adopting industrial production models with priority given to reducing costs and increasing the quality of their processes and products. Optimizing and rationalization the inventory management is a great opportunity for these companies conquer these goals. For their achievement was chosen by the methodology of study of multiple cases (two cases). Data were collected through the intersection of the following tools: semi-structure, document analysis and observation in loco. Revisions are made in theoretical work on the following topics: logistics, management of materials and production planning and control. These themes guided the search, allowing a greatest criticism about the collected data and information generated. The two case studies were presented together with a comparative table of the main aspects of the influence of demand management strategy on the inventory management in two companies.

Palavras-chaves: Inventory management, logistics, make-to-stock, engineering-to-order

ORGANIZACION INTER- EMPRESARIAL DE EMPRENDEDORES POST-FORDISTAS

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El comportamiento de los microempresarios parece obedecer a una línea mas cooperativista, sin embargo cuando se trata el tema del manejo de la tecnología, se precisa delimitar los alcances de las formas de transferencia de conocimiento que existen en este ámbito. Este artículo enfoca la situación de un grupo de microempresarios del calzado y sus rutinas de aprendizaje y como fluyen informaciones críticas a través de las prácticas diarias, en el desenvolvimiento de su memorias organizacionales aisladas. Entendemos que este proceso lleva a la creación de una “memoria social” cuyas características responden por una parcela importante en la difusión de innovaciones y también en la forma en como los microempresarios se organizan intra-empresarialmente e inter-empresarialmente para innovar sus prácticas, sus productos y su mercado. Los resultados indican una configuración distinta en el comportamiento del conocimiento y también un forma de auto-organización que demuestra una perspectiva más holística entre agentes no conectados entre si.

Palavras-chaves: Pequena y microempresa (PYME), organización del trabajo, innovación

THE USE OF REFRACTORY WASTES ON THE SAND MOLDING PROCESS AS AN ALTERNATIVE TO REDUCE RESIDUES GENERATION

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The present work was developed to understand the influence of using refractory wastes on the molding sands properties. After knowing the real influence on the properties it is possible to define the proportion of using residual wastes to save money and to reduce the wastes generation. It was applied a design of experiments with three factors and three levels to optimize the tests. They were performed grain size analysis and mechanical testing. It was used a typical #40/50 quartz silica sand and #200 silica to prepare the mixtures. The refractory wastes used in these tests were collected from the process and the mixtures were prepared considering the DOE planned. The results showed that it is possible to use the refractory wastes on the sand mixture replacing up to 50% of #200 silica without risks for the casting. It was observed that the properties did not change up to that specific quantity of refractory waste. The replacement of #200 silica by the refractory wastes reduces almost 7% of total preparation costs. The use of refractory wastes on the molding process still helped to reduce the wastes generation and its costs.

Palavras-chaves: Refractory, molding, casting, wastes, recycling, sand, residues, DOE

**SESSÃO TEMÁTICA INTERNACIONAL 14:
Sala Zélia Gatai II - Dia 09 de outubro de 2009 - das 16h30 às 18h30**

**THE FORMATION OF INNOVATIVE COMPETENCE IN THE SMALL
AND MEDIUM TECHNOLOGICAL ENTERPRISE -
TI_ST_098_660_13338**

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**EVALUATION METHOD TO DETERMINE ICT USAGE INDICATORS
ON BRAZILIAN IFES - TI_ST_098_661_14592**

Rogério de Castro Melo (CEFET)
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**TECHNOLOGIC PROFILE FOR TELEWORK: BRINGING TO LIGHT
THE MODEL OF A BRAZILIAN PUBLIC COMPANY -
TI_ST_098_661_12765**

LENITA VILLAMARIN LOPEZ LESSA (UFPB)
MARIA DE LOURDES BARRETO GOMES (UFPB)
COSMO SEVERIANO FILHO (UFPB)

**A INFORMATIZAÇÃO DO CONTROLE DE DOCUMENTOS DE UM
SISTEMA DE GESTÃO DA QUALIDADE COM A UTILIZAÇÃO DO
SOFTWARE LIVRE MEDIAWIKI: PROPOSTA DE UMA
CONFIGURAÇÃO DO SOFTWARE VISANDO ATENDER OS
REQUISITOS DA NORMA ISO 9001:2008 - TI_ST_098_662_12886**

André Boaventura Gomide (UFSC)

**ECONOMIC VIABILITY ANALYSIS AS A TOOL TO SUPPORT VOIP
IMPLEMENTATION PROJECTS AIMING SUPPLY CHAIN
INTEGRATION: A CASE STUDY IN A COMPANY FROM THE FOOD
INDUSTRY - TI_ST_098_663_13049**

Tiago José Menezes Gonçalves (UENF)
Denise Nunes Sodré Barreto (UENF)
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Renata Barreto Colares (UENF)
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**ENVIRONMENTAL PERMIT FOR THE POSTS OF FUEL DEALERS IN
THE CITY OF PARNAMIRIM-RN - TI_ST_099_668_12843**

Ana Clea Marinho Miranda Catunda (UFRN)
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DAYVISSON CABRAL FERREIRA (UFRN)

**FORMAS DE TRANSFERENCIA DE CONOCIMIENTO EN LAS
RELACIONES INTER-ORGANIZACIONALES - TI_ST_098_664_13735**

Ana Daneida Villanueva LLapa (USP)
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THE FORMATION OF INNOVATIVE COMPETENCE IN THE SMALL AND MEDIUM TECHNOLOGICAL ENTERPRISE

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The small and medium enterprise, linked to large production chains, can benefit from the development of technological competence of the mother company, giving the effect of disseminate technological of applied knowledge, at the same time thhat develop their relational competence, inside and outside of the chain. In this context, the objective of this paper is to identify the innovate competence, in the present and the future, of small and medium technology-based companies located in the Paraíba Paulista Valley in the private sectors of the aerospace and automotive clusters. For both, the methodology adopted was a descriptive exploratory research, through in-depth individual interviews with the small e medium company's owners of the cities Caçapava, São José dos Campos and Taubaté. Finally, concluded that the vision that emerges of the small and medium technology-based companies in the Paraíba Paulista Valley is an industry that can't be devoid of innovate competence, but are competences overmuch focused in the present. These companies lack justly the right competences to build your future.

*Palavras-chaves: Innovate Competence, Small and Medium
Technology-base Companies, Technological Innovation*

TECHNOLOGIC PROFILE FOR TELEWORK: BRINGING TO LIGHT THE MODEL OF A BRAZILIAN PUBLIC COMPANY

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Owing to technology configuration difficulties in telework, the present study intends to present a profile of appropriate technological configuration for a telework project implantation thus offering contributions to organizations that need a model to guide them during the implantation of their own projects in what concerns such a fundamental and challenging aspect, since telework success is closely related to the correct adoption of technology. For such, the reference taken was one of the largest brazilian public companies, whose telework model has been in operation for more than five years. To reach that aim, both a bibliographical research, to give support to the concepts presented, as well as a documental and field research were accomplished at the Federal Service of Data Processing (SERPRO). Data were obtained through the application of questionnaires to teleworkers and telework managers in the company and presented through pictures, tables and illustrations, in order to better explain the technological model adopted by SERPRO. It is essential that successful telework models are brought to light, so that the way can be easier for companies that want to implant their own models, especially in what concerns the necessary information about technological configurations for a telework model, whose costs, if not adequately managed can invalidate the model adoption. Thus being, telework can be stronger in Brazil, as it is in several developed countries that have been operating successful telework models for years, with employment and income generation, increasingly productivity levels, occupation costs and property maintenance reduction and helping reinforce their national economy as well as mitigating social problems.

Palavras-chaves: telework; technology model; technological profile

EVALUATION METHOD TO DETERMINE ICT USAGE INDICATORS ON BRAZILIAN IFES

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The technology continuously advances to create better lifestyle conditions for the mankind. Individuals require increasing levels of product and service excellence and these new demands point in direction of a more and more intense technologic solutions development. Public and private organizations need to re-adapt to this new scenario presented by the globalization in order to improve their overall quality, reduce costs, explore the potential of their human resources and being transparent to society. The Information and Communication Technology - ICT are strategic to achieve these goals as they provide the tools to support production process improvement, to help decision taking and to attend the institutional mission. Education is another key element in this context as it works as social organization element to give the abilities and conscious criticism to individuals on creating new techniques or operating existing ones. In fact, a sustainable expansion of undergraduate education in Brazil is a part of a nation project. One factor that gives support to this movement is an undergraduate evaluation model that can be continuous. The objective of this article is to determine indicators of ICT use at Brazilian public undergraduate federal institutions relying on a program evaluation methodology. A sample of three undergraduate Brazilian federal institutions - IFES was chosen: Centro Federal de Educação Tecnológica Celso Suckow da Fonseca - CEFET/RJ, Centro Federal de Educação Tecnológica de Minas Gerais - CEFET/MG and Universidade Tecnológica Federal do Paraná - UTF/PR. This work also plans to give further contributions as these indicators can be included on the infrastructure including information and communication resources dimension of institutional self evaluation in addition to help ICT managers to have a diagnostic of ICT use into their institutions and better identify which areas need more attention.

Palavras-chaves: ICT, evaluation, IFES

A INFORMATIZAÇÃO DO CONTROLE DE DOCUMENTOS DE UM SISTEMA DE GESTÃO DA QUALIDADE COM A UTILIZAÇÃO DO SOFTWARE LIVRE MEDIAWIKI: PROPOSTA DE UMA CONFIGURAÇÃO DO SOFTWARE VISANDO ATENDER OS REQUISITOS DA NORMA ISO 9001:2008

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O presente trabalho relata um processo de configuração do software livre MediaWiki realizado junto ao Programa de Educação Tutorial (PET) da Engenharia de Produção da UFSC, que objetivava a informatização do controle de documentos do Sistema de Gestão da Qualidade do grupo. Para elaborar a proposta de configuração foi utilizada a linguagem de programação PHP, bem como todo o conteúdo do MediaWiki e das extensões FlaggedRevs e FCKEditor. Como resultados dessa experiência podem-se destacar: a redução de 65% no tempo gasto na revisão de um documento e o atendimento a todos os requisitos da norma ISO 9001:2008, referente ao controle de documentos.

Palavras-chaves: Controle de documentos, MediaWiki, Sistema de Gestão da Qualidade, ISO 9001:2008.

ECONOMIC VIABILITY ANALYSIS AS A TOOL TO SUPPORT VOIP IMPLEMENTATION PROJECTS AIMING SUPPLY CHAIN INTEGRATION: A CASE STUDY IN A COMPANY FROM THE FOOD INDUSTRY

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In the twenty-first century, all the organizations are affected directly or indirectly by the use of Information and Communication Technologies (ICT's). The development of good ICT implantation projects is extremely important for a company to remain competitive in the market. In this context, the objective of this article is to analyze the importance of an economic viability analysis as a support tool for decision making in ICT implantation projects for micro and small enterprises of the food industry, and also to show how important the supply chain integration is in this section, and how the ICT's can help this integration. To achieve this objective, a case study was conducted in order to support the comprehension about the importance of the economic viability analysis as a tool to evaluate ICT implantation projects, so that investments will not only be guided by the intuition of decision makers.

Palavras-chaves: Project viability, supply chain integration, information and communication technology, food industry

FORMAS DE TRANSFERENCIA DE CONOCIMIENTO EN LAS RELACIONES INTER-ORGANIZACIONALES

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Conseguir una eficiente transferencia de conocimiento para conseguir los objetivos empresariales es un desafío que las empresas enfrentan. Entender cual es la forma de transferencia que más se ajusta a sus necesidades no siempre es una tarea fácil y a veces puede generar una ineficiente utilización de recursos. En las relaciones inter-organizacionales el desafío de transferir conocimiento se torna mayor, porque culturas, lenguas y formas organizacionales muchas veces son diferentes. Analizar las formas de transferencia de conocimiento que ocurren en este tipo de relaciones es el objetivo de este artículo, intentando responder a la pregunta: ¿será que el tipo de conocimiento a ser transferido entre las empresas influencia la forma de transferencia escogida? Para eso se recurrió a la metodología de estudio de caso. Escogimos una cadena textil de suministros (relación inter-organizacional). Nuestros principales resultados muestran que efectivamente el tipo de conocimiento a ser transferido entre las empresas influencia la forma de su transmisión, pero además este criterio de selección es influenciado por características relacionadas de las empresas y el contexto en el cual el proceso de transferencia ocurre.

Palavras-chaves: Transferencia de conocimiento, conocimiento tácito, conocimiento explícito

ENVIRONMENTAL PERMIT FOR THE POSTS OF FUEL DEALERS IN THE CITY OF PARNAMIRIM-RN

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The activity of fuel has put retailers becoming increasingly complex, as the cost of environmental accidents grows every day, should therefore undertake their activities in accordance with the standards and laws to ensure the minimization of risks to environment. This study aimed to diagnose the status of environmental licensing of dealers put fuel in the city of Parnamirim-RN. The results for the period 2007 to 2008, show that there was a decrease of jobs fuels with environmental license of operation from 23.3 to 10.0% and an increase in the number of records in violation of 16.7 to 50, 0%. To obtain the environmental permit, the procedures, most of the time, had to delay its consideration, depending, mainly, the low quality of projects submitted by entrepreneurs, as well as resistance to them, to make the necessary environmental adjustments, which is causing the significant increase in the number of administrative procedures for violation of self.

Palavras-chaves: Control of Fuel Retailers, Environmental Licensing, Environmental Accidents, Environmental Pollution, Statement of Violation.