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SYSTEMICS AND
BUSINESS INTELLIGENCE

15th National & International Conference

🌐 www.conf.hsss.eu   📅 29-30 Nov, 2019   📍 University of Piraeus

PROGRAM & ABSTRACTS

Under the Auspices of

**University of Piraeus
Department of Informatics**

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Welcome Message

On behalf of the Hellenic Society for Systemic Studies (HSSS) we would like to invite you to the 2019 HSSS 15th. National & International Conference, organized in collaboration and under the auspices of the Department of Informatics of the University of Piraeus, Greece.

The HSSS's annual National and International Conference is held alternately in different cities of Greece in collaboration and/or under the auspices of one or more local Universities or with a contribution of a relevant international or Greek organization.

The main theme of the Conference, is to present the dynamic scientific area of "**Systemics and Business Intelligence**" with applications in organizations and enterprises across a wide spectrum of both service and production industry sectors.

Given the dynamic nature of this challenging area, Systemics will bridge the gap between theory and practice and will promote the use of effective Methodologies and Multi-Methodologies in managing today's organizational complexity for Organizational Excellence.

Our interdisciplinary international community has the scientific systemic tools and powerful specialized software to tackle up-to-date multi-dimensional strategic complex problems and to manage their complexity in different applied areas of practice.

The prominent national and international invited speakers in the scientific program, the exciting professional panels, the professional round table, and the professional workshop, will attract the attention of a large number of our colleagues. Further, the participation of the International Federation for Systems Research (IFSR) members, the International Academy of Systems and Cybernetic Sciences (IASCYS) members, the European Union of Systemics together with renowned consultancy firms of national and international stature, will make this Conference a very successful and memorable one in the history of HSSS Conferences.   Who should attend?

* Academics: Communicate your research results with colleagues around the world.

* Consultants: Present the power of systems thinking, modeling and simulation in your applied, client-oriented work.

* Practitioners: Show modeling and simulation at work in your organizations.

* Graduate students: Share your developing research in a constructive environment.

* Undergraduate students: Have a good experience within a challenging and professional environment.

    Piraeus is the main port of the Attica region. Its economy is also supported by manufacturing, trade, services and tourism.

    Piraeus is an ideal place for bringing together colleagues from all over the world to promote and exchange ideas, knowledge and experience for the benefit of both organizations and enterprises in effectively meeting the needs of a challenging international community.

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Acknowledgements

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PRT-1	**Business Intelligence & the Systems Approach: From Data to Wisdom**
	Chair: Mr Dimitrios Varsos
	Contributors:
	  – **Prof. Nikitas Assimakopoulos**
	  – **Prof. Peter Groumpos**
	  – **Prof. Athanasios Kriemadis**
	  – **Prof. John Thanopoulos**
	  – **Mrs Andrée Piecq**
	  – **Dr. Stergiani Giannakou**
	  – **Mr. Alexis Kainadas**

20:00 – 20:15 🇬🇧	Conference Closing **HALL 1, Main Amphitheatre, Ground Floor**
20:30 – 10:30	Gala Conference Dinner Refectory Room, Ground Floor

Scientific Events

KN-1

Artificial Intelligence for Business Intelligence

Prof. Peter P. Groumpos

Department of Electrical and Computer Engineering

University of Patras, Greece

No surprise that there is not one definition of Artificial Intelligence (AI) been accepted by all. AI is the study of how to make computers do things at which, at the moment, people are better. Or AI is the simulation of human intelligence processes by machines, especially computer systems. In computer science, artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans. Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. In this plenary presentation an effort is made to see how AI is related and affecting Business Intelligence (BI). BI is a technology-driven process for analyzing data and presenting actionable information "intelligently" (to be defined) which helps executives, managers and other corporate end users make informed business decisions. BI encompasses a wide variety of tools, applications and methodologies that enable organizations to collect data from internal systems and external sources, prepare it for analysis, develop and run queries against that data and create reports, dashboards and data visualizations to make the analytical results available to corporate decision-makers, as well as operational workers. And all these on an intelligent way. Overall, the role of BI is to improve all parts of a company by improving access to the firm's data and then using that data to increase profitability. Companies that employ BI practices can translate their collected data into insights of their business processes. The insights can then be used to create strategic business decisions that improve productivity, increase revenue and accelerate growth. To achieve these goals methods and techniques from AI and Intelligent Control (IC) need to be utilized and properly used. However there must be made clear that AI and BI are two different scientific areas. In this plenary talk the differences between them will be analyzed. The different goals and objectives of each scientific area will be considered and properly discussed. Companies like Microsoft, Oracle, and Tableau have developed BI tools for a range of business functions, including HR, sales, and marketing. By monitoring everything a business does on a daily basis – and utilizing data to create spreadsheets, performance metrics, dashboards, charts, graphs, and other useful visualizations – businesses can organize data and make traditionally difficult decisions much more easily. The adoption of BI solutions has grown nearly 50 percent in the past three years.

KN-2

Why do we Visualize? Paradigms from Exploratory Data Analysis, Data Journalism, and Artificial Intelligence.

Dr. Andreas S. Maniatis

Entrepreneur, Commercial Manager, and Head of Analytics,

CyberStream Ltd

We, Homo Sapiens, are by gene coding a visual biological species. Vision is by far our most important sense, and has thus helped us dominate the planet.

But what does the phrase "Data Visualization" sound like to the uninitiated? "Data" conjures up images of computers and statistical analysis, whereas Visualization is more accessible but vague enough so as to be unclear. One may wonder: Is Data Visualization new, overflowing with cutting edge tools and technology, or is it as old as human communication itself? Well, Data Visualization may be rooted in ancient times and have a rich history over the last couple centuries, but the field is transforming in the technological age, and transforming the world along with it. Big Data Analytics and Artificial Intelligence, along with Machine Learning and Deep Learning, have become the major scientific and technological catalysts that have successfully set in commotion a whole world of new, relative applications.

So, we Visualize, because:

- Visualization is the most secure path towards achieving true Business and Organizational Intelligence, both in terms of entrepreneurship, as well as of technology,

- Story-telling, Narration, and Comprehension are greatly augmented when Visuals are included and are wisely and carefully used, and finally,

- Data Visualization has been a tremendously successful tool supporting Exploratory Data Analysis (EDA) at all levels, thus promoting the analysis and understanding of data in every single domain and area of application.

But despite the fact that the three pillars mentioned above form a more or less expected and straightforward path towards understanding and interpreting data, using them in various everyday applications (ranging from simple sales reports to autonomous car driving) is anything but trivial. We will herein work with history, reference examples and case studies that will help us adopt a recommended Data Visualization process.

KN-3

Benchmarking: A powerful tool of Business Intelligence for continuous organizational improvement.

Prof. Thanos Kriemadis

Univesity of Peloponnese, Greece

Business Intelligence (BI) is a set of technologies, methodologies, processes, and practices for gathering, storing, analysing, and providing access to data and business information, with the purpose to assist managers in decision-making at strategic, tactical and operational level (e.g. to identify new business opportunities, areas for improvement – inefficient business processes, cut costs, etc.). BI can improve quality, productivity and competitiveness of contemporary businesses. Benchmarking is a powerful tool of BI. It is the process of comparing Key Performance Indicators (KPIs) and business processes to main competitors, best-in-class business, and industry standards. It is the search for new best practices that lead to outstanding performance. The term best practices, according to Evans and Lindsay (2008), refer to methodologies that generate exceptional outcomes. A review of Benchmarking literature reveals that there is a great number of Benchmarking process models. The Benchmarking process developed by AT&T as well as by Chang and Kelly (1994) will be presented and analysed in depth. Competitive benchmarking, process benchmarking, and strategic benchmarking will also be discussed in detail.

KN-4

Once upon a time The Burnout - A systemic vision on Burnout

Mrs Andrée Piecq

General Secretary of the EUS-UES

Generally "burnout" is considered as a workers' illness. This psychosocial disorder is caused by a physical or mental suffering. All psychosocial disorders conduct to absenteeism, but in the case of Burnout, this absenteeism is often extremely long and can sometimes last for years. The costs of it are thus enormous.

This presentation offers an analysis that does not focus directly on workers. It considers absenteeism as a symptom on its own. This symptom shows that the company's functioning is not optimal. Thereby there is a high risk that psychosocial disorders such as burnout emerges.

This analysis uses a systemic model, called the "Giroscope". Like the real gyroscope, it indicates the direction to follow.

In this paper the model is used to diagnose the functioning of companies in order to ensure its sustainability.

It starts from the analysis of 12 systemic concepts called "guiding principles of systems": systems/subsystems, members, boundaries, rules, finality, information broadcast, information reception, totality, circularity, feedback, homeostasis, "equifinality".

They interact with each other's and help diagnose the functioning of the company.

Thanks to the gyroscope, strategies can be developed in order to prevent or to correct all psychosocial disorders, including burnout.

Keywords: Burnout, guiding principles, companies' functioning, strategies

WS-1.1

GLOBAL MANAGEMENT and BUSINESS INTELLIGENCE

Global Manager: Self-actualize

Dr. John Thanopoulos

Emeritus Professor, University of Piraeus

Central figure of our era is the corporate manager and this workshop aims to elaborate on some of his/her self-actualize understanding and managing responsibilities. Do we need, for example, to address Adam Smith's essence of happiness (1760, a man who in health, who is out of debt, and has a clear conscience and/or being loved and being lovely?)

In this panel we aim further than the definitional development of the term by moving to offer specific concepts that assist the managerial self-actualization. Therefore, each letter starts a relevant concept. Most of them are "Classics" (Abraham Maslow (1908-1970, pyramid of needs: Physiological, Safety, Love/belonging, Esteem, Self-actualization), specifically, SMILE, CREATE, CARE, HONOR, EXCEL, ACTUALIZE, ADAPT, whereas the rest capitalize on "Meta-values" (Larry Mullins 2009) like RESPECT, HELP, DREAM, DARE.

WS-1.2

GLOBAL MANAGEMENT and BUSINESS INTELLIGENCE

Business Intelligence in multinational companies: The present and the - not so far - future

Nikolaos Papazoglou

University of Piraeus, Department of Business Administration

During the last thirty years, business intelligence has an increasingly important role in business life. It contributes by collecting and analyzing data from both internal and external sources, sharing information and extracting reports, which help managers to take the best possible decisions. Business Intelligence is technology-driven and involves a variety of tools and methodologies used. It is also a dynamic procedure that varies among firms form different countries or in different industries. Hence, in order to face this complexity, we should capitalize on the deep knowledge of different aspects and trends of business intelligence.

This paper aims to demonstrate differences between current practices and future trends. Insurance, technology and services industries have the highest penetration of business intelligence functions. At the same time, according to surveys, data quality management, data discovery and self-service business intelligence are the most remarkable trends of business intelligence experts. It is also believed that concerning the future, business intelligence and business analytics will be combined within the same platform in order to have more accurate and effective strategies.

Finally, as the main objective of firms, which use business intelligence tools, is to improve their revenues, we can understand the high importance of such tools in, especially, multinational firms. These topics will be covered by the current paper which will also act as a review paper that connects business intelligence and multinational company.

Keywords: business intelligence, multinational company, industry.

WS-1.3

GLOBAL MANAGEMENT and BUSINESS INTELLIGENCE

The Value of Business Intelligence Systems within the Corporate Governance Values Mechanism

Despoina Caminis

University of Piraeus, Department of Business Administration

The era of the new technology gained entrance in all aspects of the corporate environment and had a valuable contribution to the higher level of the corporate administrative mechanism. Corporate global context is more complex and needs intelligent solutions to improve the performance of the governing body for the control and direction of the corporate mechanism. By this meaning, corporate governance systems expect business intelligence systems to be a valuable resource in the decision-making process.

The economic value of the information that business intelligence systems are providing, will bring utility to the performance of the corporate governance mechanism, by reducing information asymmetry on agency problems and by enhancing transparency and security. Corporate transparency, security and information disclosure are the Corporate Values that are nowadays embedded to a corporate governance network between directors and shareholders and stakeholders.

Technological operations related to the business intelligence systems like Blockchain technology, are suggested from the International organizations such as OECD, to map the basic purposes of corporate governance against the basic properties of blockchain technology. Board efficiency is based on these performance levers that will lead modern corporations to a long-term progress and continuous transformation to achieve sustainable goals.

Keywords: business intelligence, corporate governance, board performance, decision making, transparency, corporate disclosure, information asymmetry, blockchain technology.

WS-2

System Dynamics for Business Intelligence

Introduction by Aris-Rallis Antoniadis

The main characteristics of a modern business environment are its increased dynamics with its rapid changes and its great complexity. For modern businesses and organizations to be able to survive and maintain their competitiveness, they must be able to absorb the complexity of the environment in which they operate, while perceiving at the same time their tendencies in order to respond to its future demands in a timely manner.

For this goal to be achieved, managers are charged with addressing the increased diversity that their business / organization receives, implementing the changes required and ensuring the effectiveness of their organizational processes by adapting to the latest technological developments without diverging from the short deadlines.

Business Intelligence (BI) can be considered as a set of tools, processes, practices and individuals that are used to implement useful information aiming at making the right decisions in a business / organization in order to improve its competitiveness, profitability, or productivity. It is characterized by a continuous monitoring of business trends, the evolution and the rapid adaptability to constantly changing situations, making smart business decisions despite any uncertain crises or contradictory information. Based on research and analysis of irrelevant information, it is capable to provide relevant knowledge, identify trends and discover new opportunities.

Systems Thinking is a relatively new way of thinking and problem solving, by treating organizations as global entities / systems while maintaining their identity and integrity and describing the dynamic relationships that influence systems' behaviors and influences the right decision making. Systems Thinking has contributed with new effective methods of dealing with problems in a systemic rather than reductive way by looking at different behavioral archetypes and examining the underlying systemic interactions that are responsible for such behaviors and events. After all, there are plenty of examples of businesses / organizations that failed to function effectively as a whole and maintain their viability when all their individual independent sections were optimized separately without taking into account the potential impact of their own optimization on the other sections of the business / organization.

System Dynamics is a methodology which, when supported with the proprietary software, enables the analysis, framing, understanding, and the ultimate problem solving that occur in complex real-world systems. Through problem modeling, decision makers are able to test their scenarios and strategies by performing experiments through effective simulation of dynamic systems to better understand problems and make rational decisions and strategy recommendations before applying them to the real-world problem.

Sustainable business modeling is the process of developing a sustainable business model.

The purpose of this Workshop is the presentation of tools and methodologies that: support sustainable business modeling, capture the value proposition taking into account all parties involved, monitor the progress of a business on the path to sustainability and examine archetypes of elements of a sustainable business model. Emphasis is given to the Business Model Canvas (BMC), the triple BMC and a simulation of Business Model Canvas using AnyLogic software is also presented.

The models of other applications are also presented and explained as well as the execution of simulation experiments for various scenarios that can be applied with appropriate customization aiming at processes' improvement and the monitoring of the behavior of Dynamic Systems over time, which are encountered in real-world problems.

Keywords: Business, Intelligence, Sustainable, Modeling, Business Model Canvas, Simulation, System, Dynamics, Anylogic.

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- Aris-Rallis Antoniadis (Chair)
- Panagiotis Kalofonos
- Pelagia Chourdaki
- Antonios Dragonas

WS-2.1

System Dynamics for Business Intelligence

Value Proposition Canvas as a tool for systemic approaches in a rapidly accelerated world

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Around the world new business models are deviced, developed and implemented faster than any past decade. Long established ways of doing things, change as organisations discover or uncover new sources of value by riding the crest of rapidly decreasing technology costs, new and robust networks, the appearance of new and promising markets and innovative ways of thinking and practices

It is popular belief that the possibilities of business model innovation today are infinite while greater and riskier experimentations becomes more common and new business models emerge and shine better than ever.

Organizations are using new business model design to build unique approaches to delivering value that have the eventual possibility to radically disrupt industries.

This presentation unfolds what is considered as a prerequisite of an eventual business model innovation in the presence of numerous change drivers that are shaping the global economy and demand new approaches from organizations if they need to rethink and reshape their business models. Additionally it considers the severity of understanding the impact of systems when assessing how value is created.

Creating a value proposition is an essential part of business strategy addressed as a promise of value to be developed, delivered, communicated, and acknowledged to a specific customer. On the other side from the customer viewpoint is about how his benefit will be delivered served and experienced. The development of this specific value proposition is based on a review and analysis of the benefits, costs, and value that an organization can deliver to its customers and may be perceived as a positioning of value, since Value are the benefits minus any cost and risk.

Since value proposition characterizes the relationship between the successful fulfilment of client needs from products or services performance attributes and the total cost, the famous authors of BMC Osterwalder and Pigneur, suggest that the value proposition must be observed and studied through the entire value life cycle in all five stages.

Starting the analysis with the VPC, provides valuable insights enabling the fulfillment of the first two segments of an intended Business Model Canvas. The Value Proposition and Customer Segments.

Finally, the usage of systemic approach enhances the effectiveness of the Business Model Canvas since it takes in consideration all other factors in an augmented and holistic way besides the supplier and client side.

WS-2.2

System Dynamics for Business Intelligence

Sustainable Business Modelling – Simulation Modeling of Business Model Canvas

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Modern companies, even if they are leaders in their business, cannot afford to stand still. In order to follow the developments of a rapidly changing environment in which they operate, they are required to interact with the socio-cultural environment in which they are located and to recognize that they are responsible for any economic, social or environmental consequences that their business activity may cause, considering at the same time all the risks managed.

As a result, they are under a constant pressure to operate in a sustainable way and adopt a systemic approach, which seeks to take into account the three dimensions of sustainability - social, environmental and economic - in a way that creates shared value for all stakeholders, including the environment and society. That is, they have to adopt sustainable business thinking.

Therefore, aiming at their survival, they have to monitor their environment closely, properly assess competition and try to understand their customers. To achieve their goal, they gather as much information as possible, which will be used appropriately for decision making and strategy development with respect to society and the environment.

One term for gathering and analyzing business information is "business intelligence" (BI).

Business Intelligence includes those strategies used to gather information to improve the competitiveness, profitability, or productivity of an organization or company.

But the transition to a sustainable world necessarily requires a major change in the way businesses are designed and operated to produce sustainable value (environmental, social and economic).

This means that the dominant neoclassical model of business should be radically transformed taking into account social and environmental priorities.

A key factor in leveraging companies to transform their business model is the Value Proposition, which solves problems and satisfies customer needs in traditional and interested parties in viable business models.

Sustainable business modelling is the process of developing a sustainable business model. However, although sustainable business model innovation is an emerging and burning issue, only a few tools are currently available to assist companies in sustainable business modelling.

In this paper, Business Intelligence, Systems Thinking, System Dynamics and Sustainability are first discussed followed by the process which guarantees sustainable business modelling. Next, tools and methodologies are presented that: support sustainable business modelling, capture the value proposition taking into account all parties involved, monitor the progress of a business on the path to sustainability and examine archetypes of elements of a sustainable business model. Emphasis is given to the Business Model Canvas (BMC), a useful tool which depicts a business model. The Triple Layer Business Model Canvas is being considered which besides economics takes into account the environmental and the social dimension of the model.

Through problem modelling, decision makers can test their scenarios and strategies by executing experiments by effectively simulating dynamic systems to better understand the problems and make rational decisions and strategic recommendations before applying them to the real problem.

Applying System Dynamics methods, modelling and simulation of Business Model Canvas follows with the help of AnyLogic software.

Keywords: Sustainable, Business, Modelling, Intelligence, Model, Canvas, Anylogic

WS-2.3

System Dynamics for Business Intelligence

System Dynamics in Tourism: Designing a Tourist Guide Application on demand.

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Systemics with powerful tools and specialized software can face the raised complex problems in business Intelligence of the tourism sector. The latest trend is the development of tourism guide apps supported by the new digital technologies and customer-oriented content on demand. These innovative apps have the potential to personalize the tourist experience with customized services. In order to simulate the users' behavior, a systems dynamics model has been developed using Anylogic S/W and various scenarios are explained.

WS-2.4

System Dynamics for Business Intelligence

System Dynamics for fuel consumption of a commercial ship under changing cruise conditions

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In this paper, a model is developed, which estimates the fuel consumption of a commercial ship under changing cruise conditions for a time period selected by the model operator.

The approaches to studying complex systems are based both on causally explained behaviors/states of subsystems (usually highly simplified/attenuated) of the studied system but also on compulsory "holistic approaches" of the behaviors/states of the subsystems of the studied system. These "holistic approaches"/interpretations are not causal step-by-step reconstructions from previous parts, but the methodologically robust documented examination and interpretation to produce not physical but "behavioral" rules for the studied system. We approached the extremely complex problem of "ship cruise" starting from recorded observations, which we incorporated with appropriate functional dependencies and techniques into a system dynamics model developed with Vensim PLE, as we evolved it to support the systemic time!

In this model the selected parameters affecting fuel consumption are (a) Type of vessel, (b) Ship's Speed, (c) Wind's speed and (d) Ship's aerodynamic resistance coefficient.

Fuel's consumption affection due to waves and resistance to air depends on the ship's cruise angle and on the air direction and we use a set of weight factors to apply the influence of the waves' speed on the cruise's energy requirements.

Model's Equivalent energy charges which due to ripple:

Our approach to estimate the needs for additional energy to overcome the ripple under windy and, therefore, wavy conditions, is that the ship follows a sinusoidal cruise line, instead of the straight line from point A to point B in case that no wind exists.

The length of each equivalent sinusoidal cruise is calculated using methodologies equivalent to generating systemic time from the Vensim PLE, and then contributes to the calculation of the energy charge for the cruise with the selected ripple.

Longer distance coverage in the same time period results to increase the average (and instantaneous) speed of the ship, thereby increasing the energy consumed depending on the square of speed.

There are screenshots available of the simulation run for various initial conditions for all parameters selected and associated with the model.

WS-3

Professional Systemics through Applied Visual Analytics and Artificial Intelligence on Big Data

Dr. Andreas S. Maniatis

Entrepreneur, Commercial Manager, and Head of Analytics,

CyberStream Ltd

In the last few years, three key factors have dramatically changed the approach analysts have towards data exploration and analysis:

- Available data volumes have exponentially increased, as they have been fed from additional, massive sources of new and complex information such as the search engines and social media environments,

- Business analysts have introduced new systematic approaches to the process of decision making across the organization, emphasizing in questions such as "why" and "what next", as opposed to the simpler "what" and "who", answered by contemporary Business Intelligence tools, and

- Artificial Intelligence has been revived, thanks to the abundance of data, the extreme processing power now available even in smartphones, and the advances in data science, neural nets and algorithms.

This convergence of data and analysis is ushering in a new business analytics model that also redefines the functional specifications supporting tools must possess, so as to answer within split seconds questions that lead to mission critical decisions. Business Analytics, a term that eloquently describes this new paradigm, are largely based on the most recent advances in the Information Visualization and the Human-Computer Interaction areas. In addition, Artificial Intelligence has re-emerged from the eighties, this time not only as an Academic discipline but also a driving force in real life applications powered by Machine Learning and Deep Learning, such as autonomous driving cars, forecasting, etc.

Visual Interactive Analytics and Data Science Platforms, such as TIBCO Spotfire, constitute state-of-the-art frameworks that drive data exploration to a completely new level in terms of usability, accuracy and on time delivery of answers.

The current workshop will place the terms introduced above within the relative real application context, especially under the focus of Professional Systemics and Business Intelligence.

WS-4

Project Management Office (PMO) as a Business Intelligence Function

Professional Panel

Professional Panel Description by Theofanis Giotis

A recent Computers Associate (CA) study with TechValidate tried to validate the changing role of the modern PMO. When asked, "Who typically consumes your reports?" **95% of respondents pointed to managers**, while **60% also included VPs**. **Nearly 50% said their reports made their way up to the C-level.**

So it is clear that people across organizations (*from resource managers, to Vice Presidents and C-level executives evaluating business opportunities*) are using data collected, processed and distributed by the Project Management Office (PMO) to make **strategic business decisions**.

While the work done by today's modern PMOs guides the entire organization, the main focus of PMOs is increasingly on providing **executive leadership** with meaningful insight around the work being delivered through both predictive **(traditional and waterfall) and adaptive (agile and hybrid)** innovation methodologies.

Getting timely data to decision-makers enables **business intelligence and agility** and helps ensure that the work being delivered will bring the most value to customers and the company.

Professional Panel Speakers:

- Theofanis Giotis
- Dr. Panos Chatzipanos
- Georgios Feidogiannis
- Nektarios Psycharis

WS-4.1

Project Management Office (PMO) as a Business Intelligence Function

BI Techniques – A Primary Tool for Portfolio Governance at the Executive Level

Dr. Panos Chatzipanos

Ph.D., M.Phil., D.WRE., Dr. Eur Ing.

President of ECONTECH SA, President of PMI Greece Chapter (2014-2020) and President of ASCE Hellenic Section

The development and the establishment of a project portfolio management framework at various organizations will be discussed. A portfolio management office was created, and active senior management support followed which underpinned the whole effort. Since the PfM framework was established, and its statutory documents were approved by the BoD, a controlling PfMO acts as the "control tower" for all project-based work. Prompt verified reporting of portfolio component's performance to Governance has proved pivotal for swift decisions particularly at the strategic level. BI techniques have been indispensable for such reporting to the BoD and other major portfolio stakeholders like the Government and the EU.

WS-4.2

Project Management Office (PMO) as a Business Intelligence Function

From Zero to Value Machine: Building a PMO that Executives Embrace

Georgios Feidogiannis

BA, PMP®, Prince2, CCMPTM, Prosci

Donegood Consulting, Lead Consultant (2019 - now)

ACMP, Certification Governance Board Member (2019 - 2022)

Today, project management is regarded as a strategic competency and, as such, can drastically improve the organization's competitiveness and safeguard its sustainability. Organizations are rapidly and constantly transforming and changing their operating models and ways of working in order to become faster, better, stronger and more customer-centric. Especially for functional organizations with low project management maturity levels, the only path to achieve longevity and business success is to introduce a center of intelligence and coordination, called the Project Management Office (PMO).

This is the story of a FTSE 100 company which built an Enterprise PMO from scratch to help its executives meet the strategic goals of the organization. Through successes and failures, achievements and challenges, victories and disappointments, this short presentation shares best practices, lessons learned and practical advice on how the PMO became the leadership team's best friend and the arm of senior management. It will showcase how the PMO helped the organization increase its market share, revenues, and profits, while at the same time kept improving its customers satisfaction, products quality, and employee engagement for an industry record of 12 years in a row and still going.

WS-4.3

Project Management Office (PMO) as a Business Intelligence Function

Project Management office as a business 'Intelligent' function at AIA

Nektarios Psycharis, PhD

Team leader IT & T and Business Analysis and Project Management at Athens
International Airport

The presentation will cover the following:

- Project Management and Business Analysis in an Airport Environment

- Challenges from the Business Environment addressed

- Projects of the Business Environment 'examples'

- "Intelligent PMO" manages the above challenges

WS-4.4

Project Management Office (PMO) as a Business Intelligence Function

Back to History: What it Takes to Setup the First Program Management Office (PMO) in Greece in 1992 to 1996

Theofanis Giotis

MSc, PhD c., CSAP PMP, PMI-ACP, PMI-PBA, CSM/CSP, MCT, P2P

CEO of 12PM Consulting, Leader of ScrumAlliance Greece (2014-now)

Past President of PMI GREECE (2004-2014)

Vice President of PMI GREECE (2017-2020)

The setup of the first Program Management Office (PMO) in Greece three (3) decades ago had a lot of challenges and was not an easy task. This presentation will give for first time the insights of that PMO setup in Greece in the period of 1992 to 1996.

WS-5

The Blockchain Technologies (BT) as a motivating power for Businesses Intelligence

In this workshop three speakers will present the benefits of Blockchain Technologies and how they help on Business Intelligence.

1) Zoannos Nikos (PhD Candidate on Systemic Management of BT)

He will analyze the texture of those technologies by explaining in detail, some of the basic technical terms.

Then he will present the way that "Systems Thinking" and "Systemic Methodologies" like DCSYM, Vensim and VSM Model, could be applied on Blockchain Technologies. He will also give some examples how BT can be applied on supply chain management and maritime.

Finally, he will explain the first stages of the multimethodology that he is developing for Systemic Management of Blockchain Technologies.

2) Kalogerakis Kostas & Panou George (Hellenic Blockchain Hub)

Those two speakers are going to present the Distributed Ledger Technologies (DLT) and Blockchain in action. Their presentation will focus in:

1) History and emergence of Blockchain/DLT
2) Introductory concepts and disruption potential
3) Real life implementations and examples
4) Opportunities for Public Administration and e-governance
5) Creating a blockchain community in Greece

3) Daskalakis Nikos (Senior Lecturer in Finance and Financial Management - University of Brighton)

He is going to present how market fundraising takes place via issuing new securities in financial markets (IPOs, SEOs and bonds) and what is the equivalent of this process in the crypto market (initial coin offerings - ICOs).

He will also explain: (a) why many Project Owners use ICOs to fund their project, via offering their newly issued tokens, in exchange for other, main, cryptocurrencies, and (b) how those ICOs allow fundraisers to raise capital directly from the public, at a global scale, with no transaction costs (a relatively easy process).

Finally, through his speech the audience will get familiar with the main aspects of those ICOs, how they work, what their main features are, and how they differ from the traditional fundraising processes.

WS-5.1

The Blockchain Technologies (BT) as a motivating power for Businesses Intelligence

Analyzing data from a bunch of transactions (Block of a Blockchain) can lead to optimization of Business Decisions.

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Business Intelligence (BI) is a technology-driven process for analyzing data and presenting reports, which helps managers and executives to make better business decisions. In order to achieve a proper data analyzation and an optimized visualization, a variety of tools, applications and methodologies can be used. Those analytical results consist of the driving force of business decision making process that is why the methodologies that are going to be used in each case must be chosen carefully.

Systems Science provides methodologies suitable for data analysis. For example, Dcsym methodology can be used to design the relation between the nodes of the decentralized network and to highlight any problem that may occur in case of an attempt of wrong data entry in a block or phenomena, like "deep fake". System Dynamics is also a methodology (mathematical modeling technique) which can be used to frame, understand/explain, and discuss complex issues and/or problems. This methodology can be used in order to create a Mental Model which will predict, through time, the full extent of the blockchain and its versatility.

The main purpose of our study is to present to you how the "Systems Thinking" and "Systemic Methodologies", like those we have mentioned before, can be applied on Blockchain technologies. Also, through the different sections of this study we will show you the first stages of a multimethodology that we are developing for the Systemic Management of Blockchain Technologies.

WS-5.2

The Blockchain Technologies (BT) as a motivating power for Businesses Intelligence

Distributed Ledger Technologies (DLT) and Blockchain in action.

Kostas Kalogerakis & George Panou

Hellenic Blockchain Hub

The presentation will cover the following sections:

- History and emergence of Blockchain/DLT

- Introductory concepts and disruption potential

- Real life implementations and examples

- Opportunities for Public Administration and e-governance

- Creating a blockchain community in Greece

WS-5.3

The Blockchain Technologies (BT) as a motivating power for Businesses Intelligence

Blockchain and Fundraising: The case of Initial Coin Offerings (ICOs)

Daskalakis Nikos

Senior Lecturer in Finance and Financial Management

University of Brighton

In the traditional financial system, market fundraising takes place via issuing new securities in financial markets (IPOs, SEOs and bonds). The equivalent of this fundraising process in the crypto market is done via initial coin offerings (ICOs). Project owners use ICOs to fund their project, via offering their newly issued tokens, in exchange for other, main, cryptocurrencies.

ICOs allow fundraisers to raise capital directly from the public, at a global scale, with no transaction costs, and following a relatively easy process. These ICO features have resulted in tremendously fast and high-valued fundraising, where millions of dollars can be raised in a few hours' time. Given that ICOs are a relatively recent phenomenon, one can observe important case-by-case variations on how they are conducted, and there is no single process that is universally followed. However, there are specific steps that most of the ICOs seem to follow. And although ICOs is a quite recent and constantly evolving phenomenon, the way ICOs are conducted, already shows some clear differentiations from the traditional fundraising forms. These will be the main aspects that ICOs will be approached in this presentation, namely how ICOs work, what their main features are, and how they differ from the traditional fundraising processes.

WS-6

Business Intelligence
in Organizational Context - Systemic aspects

This workshop deals with organizational applications of Business Intelligence (BI), attempting to highlight the relations of BI with other disciplines as well as the complexity that arises in complex interdisciplinary situations. After a short introduction to BI, the discussion will revolve around how BI can help in other organizational aspects and how it benefits from the process approach. Such creative combinations can open new avenues for innovative solutions towards organizational needs or new services or product development.

The workshop contributors and the respective topics they will present are the following:

Panagiotis Papaioannou:
Business Process Management and Business Intelligence.

Viktoria Zgouva:
The Role of Business Intelligence in Organizational Resilience & Viability: A Systems Approach.

Antonios Dragonas:
Systemic Operational Processes: Macro and Micro Processes for Business Intelligence.

WS-6.1

Business Intelligence in Organizational Context - Systemic aspects

Business Process Management and Business Intelligence

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Business Process Management (BPM) refers to disciplines, methodologies, and tools for managing the operations within an organization aiming at ensuring the consistency of the final products and finding opportunities for improving quality and efficiency.

There are many benefits of applying BPM practices in an organization, starting from the most obvious that is the transparency in operations. Consequent benefits are better functioning of the organization in terms of efficiency and compliance as well as market positioning in terms of product quality, customer satisfaction, and agility in the business environment changes.

Coming to Business Intelligence (BI), its purpose is to exploit and interpret data to enable more effective decision-making at either strategic, tactical, or operational levels. However, the objective is not just the data since the change will come by changing the processes. Thus, BI makes sense when it ends up with BPM initiatives that put in action the conclusions arising from BI techniques and data exploitation. Apart from that, there is also a reverse relation between BI and BPM. BI supports BPM by providing findings of process execution based on data collected from information systems log files, technique known as process mining.

BPM combines information technology and management sciences and applies them to the business processes that operate within an organization. Moreover, BPM involves people coming from different parts and levels of the organization; Process Owners, the management team, process participants, process analysts, IT systems engineers and, sometimes, external stakeholders. For this reason, BPM goes beyond mere specialization and becomes an interdisciplinary subject.

On the other hand, BI uses data to create business knowledge than will affect business decisions. Especially when starting a BI project, evaluating what conclusions, reports, dashboards, or KPIs are worth for the organization is a task that involves people coming from different departments and having diverse expertise or authority. Thus, it is a cross-field application that requires an interdisciplinary approach.

In this workshop part, the discussion will revolve around the fundamental aspects of BPM, the essential BI functions, and how the systemic approaches and methodologies can contribute to this complex, cross-field, and cross-boundary issue, facilitating collaboration and bringing innovative solutions.

WS-6.2

Business Intelligence in Organizational Context - Systemic aspects

The Role of Business Intelligence in Organizational Resilience & Viability: A Systems Approach

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The need for Business Intelligence (BI) has been accentuated due to the advancement in information technologies and data management and the need of organizations to effectively handle the challenge of information processing in the current big data era. The explicit objective of BI, as a technology-driven process, is to improve the quality of inputs and the timeliness to the decision process, providing useful information (outputs), significant for the decision-making at operational and strategic level. This can be succeeded by using a wide range of BI technologies functions including, but not limited, to reporting, data mining, process mining, on-line analytical processing (OLAP), complex event processing, business performance management, predictive and prescriptive analytics.

Nowadays, interrelated complexities between environments, organizations, and information technologies have raised the need for building resilient and agile organizations. Organizational resilience means being capable of: (a) anticipating future threats and opportunities, (b) monitoring and reviewing past actions and assessing changes, (c) responding to present conditions, and (d) learning from past failures and successes. In this context, the integration of agile BI technologies into the existing information systems of organizations is essential for facing big, complex issues that abound in modern business and maintaining continuous improvement of the existing systems and processes. BI functions can help organizations be flexible and agile. Descriptive BI methods can be used for analyzing the past and the current state, while predictive and prescriptive business analytics tools are appropriate for gathering data about what is going to happen in the future and what should be done to create better outcomes. These, combined with the existing information systems in an organization, can contribute to the improvement of its overall performance.

One of the most significant benefits of BI in times of ambiguity and uncertainty is the competitive intelligence, a process according to which external information from the customers and competitors position and the overall competitive environment of the organization is systematically gathered and analyzed. External data, derived from the environment of the organization, combined with data from its internal environment, can be converted to useful information for the

executives, managers and other corporate end users, who gain strategic and operational insights quickly and effectively.

This paper aims to illustrate how the adoption of BI technologies can contribute to the improvement of the organizations efficiency. Systems thinking methodologies and tools, including the Viable Systems Model (VSM), can contribute to a comprehensive understanding of the overall process of the integration of BI systems to the existing structure of the organization. The "intelligence" function of the VSM, which constantly interacts with the overall environment of the organization and searches for new possible opportunities for development, is mainly responsible for identifying the emerging needs for BI technologies. The VSM, through its fractal structure, can illustrate how BI technologies can improve the effectiveness of the whole organization, from the operational level to the strategic management level, ensuring, in this way, its organizational viability.

References:

"Business Intelligence". (n.d.) Retrieved October 29, 2019 from https://searchbusinessanalytics.techtarget.com/definition/business-intelligence-BI

Denyer, D. (2017). "Organizational Resilience: A summary of academic evidence, business insights and new thinking". BSI and Cranfield School of Management.

Negash, S. (2004). "Business Intelligence". Communication of the Association for Information Systems, Vol. 13, Article 15. http://DOI:10.17705/1CAIS01315

Park,Y., El Sawy, O.A. & Fiss, P.C. (2017). "The role of Business Intelligence and communication technologies in organizational agility: A configurational approach". Journal of the Association for Information Systems, 18(9):648-686.

Patriarca, R., Di Gravio, G., Costantino, F., Falegnami, A. and Bilotta, F. (2018). "An analytic framework to assess organizational resilience". Safety and health at Work, 9(3): 265-276.

Pratt, K.M. (2019). "What is business intelligence? Transforming data into business insights". CIO Digital Magazine. United States. Retrieved October 29, 2019 from:https://www.cio.com/article/2439504/business-intelligence-definition-and-solutions.html.

WS-6.3

Business Intelligence in Organizational Context - Systemic aspects

Systemic Operational Processes:
Macro and Micro Processes for Business Intelligence

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In this Workshop we will deal with building a good understanding of the meaning of Systemic Operational Processes and linking the Macrocosm Processes to the Processes as they exist and operate in the Computational Microcosm.

Systems consist of integral parts, all interacting with each other and the System interacts with the environment. A System consists of Subsystems (downward causation) and the subsystems belong to Supersystems (upward causation).

Systems become viable when they are capable of adapting themselves to environmental changes, interacting with them, and when they are capable of producing the effects for which the changing environment demands.

Active Systems produce results through the transformation of the inputs they receive from their environment, through Processes performed by their parts appropriately selected and interconnected parts under high complexity.

Here, we present Processes as integrated business entities within a System, in order to understand their functionality and their relationship to the intended results. We present a proposal that makes understandable both their structure and their execution capability and performance and their variability with respect to the purposes that the System is called upon to achieve.

We define the concepts of Elementary Processing Performer, Processing Structure, Process Links, Process Flows and Processes, and then associate the concepts of System Purpose with the complex process of selecting the change/ reaction of the System to achieve a compulsory purpose. The selection process is executed by a Decision Making System and the successful Response of the System to the changing calls of its environment can be named as "operational intelligence".

Considering that an important factor, in order for a System's interaction with its environment to be considered successful, is to limit the consumption of Systemic Energy to achieve the desired result, we refer to examples from the Natural Macrocosm and from the Computational Microcosm in which we can find better utilization of the resources of the System (Parallel Processes).

Following is an overview of the origins of a multitude of Processing Structures and Processes Applied to Modern Informatics, and we present some of the mechanisms by which Macrocosm Processes have been integrated and fully operational in Applied Informatics.

And finally, we demonstrate the usefulness and applicability of our conclusions from the implementation and use of Processes in the "attenuated" Computational Microcosm Macro-cosmic Systems of high interest after appropriate attenuation.

The certification of the effectiveness of technologies and methods involving Parallel Processing is substantiated by reference to two parallel algorithms that we have design and implement, which achieve the desired results with exemplary

quality in a minimum slice of time as the first Algorithm classifies extremely fast integers (or alphanumeric characters) using continuously all selected processors of the system in parallel. And the second Algorithm, which simplifies over 90% a complex polygonal lines, while maintaining the visual quality of the line produced by applying the "Round Robin" service technique.

Both Algorithmic techniques, presented, are directly applicable to the business Macrocosm and would make a significant contribution to the "operational intelligence" of a System.

WS-7

CSAP Reunion – From the past to the future

Prof N. Assimakopoulos

Dr Stergiani Giannakou

Mr. Alexis Kainadas

PRT-1

Professional Round Table

Business Intelligence & the Systems Approach: From Data to Wisdom

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The twenty-first century organization works and networks in an interconnected world where ambiguity and uncertainty abound. This dynamic environment necessitates continuous vigilance over the forces that impact the organization's performance, and continual refinement of the sociotechnical infrastructure that supports its purpose. Business Intelligence (BI) refers to a set of structured processes, architectures, and computer-based technologies, which convert data into meaningful information. Information, in turn, drives strategic, operational, and tactical decision-making, in every business landscape and level. Yet most traditional BI tools employed to support decision-makers lack the sophistication to effectively address the dynamic complexity that is inherent in the modern organization's business environment, relying on the simplification rather than the holistic treatment of complexity. They tend to embrace a single perspective and direct attention to the symptoms rather than the underlying structures that are responsible for the manifestation of the symptoms in the first place. Hence, problems are often treated as static events and addressed within strict functional boundaries, ignoring complex networks of time delayed feedback mechanisms, which vary in strength and direction, and nonlinear relationships that exist between the intervention and the resulting consequences. Thus, the impact of a well-intentioned intervention on one part of the system, treated in isolation, may be entirely different than the (often counterintuitive) consequences that surface on other parts of the system, with entirely different short- and long-term results. Applying a systems approach to a traditional BI paradigm enables the decision-maker to transform the raw data that is generated or collected into the quality information that augments the knowledge that is essential to understanding the forces impacting the organization's function, leading, ultimately, to the wisdom to balance short-term sacrifices, with long-term rewards. Wisdom encapsulates the essence of a systems approach, and the result of intergrading systems thinking, into every-day business operations.

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Extended Abstracts

EA-01

Decision making systems in small and medium size enterprises using business intelligence.

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EXTENDED ABSTRACT

Nowadays, decision making has been evaluated due to frequent and rapid changes in the economic environment. Thus, new management methods are required in order to meet the needs of contemporary enterprises. This applies in all kind of enterprises and also in Small and Medium Enterprise size which is our case study.

Business Intelligence is known to the art of decision making with a view to increasing both effectiveness and efficiency.

Business intelligence is a set of mathematical models and analysis methodologies that systematically exploit the available data to retrieve information. It is also consisting of a set of processes, practices, and people that are used to implement useful information to support decision making in the organization.

Dashboards are complete business information systems based on B.I. (Business Intelligence) and data integration infrastructure. In addition, the way of viewing information in Dashboards is usually done in three multi-connection levels: the level of projection of the measurements (metrics view), the multi-dimensional projection plane and the operational level of view.

So, in the beginning they want to monitor basic measurements for problems ,then they want to explore and analyze information that shed light on exceptions and reveal hidden trends and finally they want to examine detailed data and reports to identify the root causes of problems and take action to remedy the situation. The Dashboards can be divided into three types: business operational, tactical and strategic that are distinguished largely by the extent to which they use the three types of applications listed above (i.e., monitoring, analysis and management).

Organizations have always had the potential to improve operational intelligence. From SMEs to big corporate organizations that look at how future events may affect profitability or business process flow. The approach we will use is systemic and more specific we will use the systemic methodology DCSYM in order to identify the potential improvements.

Organization awareness on the importance of data analysis to improve decision-making processes has also increased. Hence, many organizations intend to improve existing BI systems with various analytical tools. It is presumed that analytics in the organization will continue to grow and become a high priority in the planning of the organization in the coming years.

Keywords: SME, DCSYM, BI, Dashboards

EA-02

Use of Systemic Methodologies in Small-Medium Enterprise (SME).

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EXTENDED ABSTRACT

Introduction: In the modern environment, organizations and businesses require to cope with a volatile present and the uncertain future in order to function, but more importantly, to survive. To deal with complexity, Systemic Methods and Models have been developed with the objective of managing these situations by Managers and facilitating decision-making.

Purpose of the Study, (CSAP Professional Certification): is to examine all the structures that govern the system under consideration and the Systems with which it either communicates or constitutes its Subsystems. Also то consider the communications between the Systems involved, with the aim of: (a) identify any pathogens, (a) address them through appropriate interventions, (c) optimize the performance of both, the organization department concerned and the employees for the benefit of the Company (d) model the effects that due to various factors could influence the performance of employees and thus the department, (e) provide a decision-making tool.

Methodology: To facilitate business decision making, practically on a Case Study (CS), we applied the following Systemic Methodologies and Models: DCSYM, VSM, Vensim Ple, BMC, BPM as well as Organizational Culture (OC) as a factor that shapes business behavior, Total Quality Management (TQM) as an integrated management system with strategic perspectives.

Specifically:

- With DCSYM Systemic Methodology: we examined the Organization structures that govern the System under examination and found a dynamic complexity in existing processes in the operating environment, which prevent its performance and efficiency from being improved.

- With VSM: we examined if and how the organization (CS) can manage the complexity of the environment in which it operates. The venture was set up to diagnose and describe the mechanism that allows a small enterprise (SME) to operate in an undoubtedly sustainable way or if the VSM would prove to be ineligible as it lacks systems (3 or 4), fundamental to all Sustainable systems.

- With BMC: we studied and attempted to 'clear' the business model, in the Current Situation of the Case Study and transform it into a viable business model proposition.

- With STRATEGIC PLANNING: we were able to: make decisions (strategies and tactics), allocate the resources (capital and people), to realize the vision.

- With Primary Research: we examined the Existing Status of Organizational Culture Factor. Findings led to Improvement Proposals through the implementation of the TQM administrative system.

- With VENSIM Ple: we took into account the Marketing Plan (of the CS), and with Vensim Ple attempted to answer the dynamic hypothesis - problem: is eWoM the most appropriate and effective way (Mean and Tactic) to promote a new online product in the internet market and achieve product adoption and sales volume?

Results: With the help of Systemic Methodologies and Models we were able to: (a) map the Current Situation of the system under consideration, (b) modeled the Problem, (c) identified and simulated the Proposed Improvements, (d) compared Results between Current Situation and the Proposed Improvements.

Keywords: Systemic Methodology, Organization, complexity, operating, business,

EA-03

Examination of the existing organizational structure of the IT Infrastructure and Operations Division of XYZ company, using Systemic Methodologies.

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EXTENDED ABSTRACT

The subject of this thesis is to examine the existing organizational structure of the IT Infrastructure and Operations Division of the XYZ company, using Systemic Methodologies.

Initially, reference is made to the basic concepts and definitions of Systemic Theory. The Viable System Model, the Design & Control Systemic Methodology and the Project Management methodology outlining the Project Life Cycle are presented.

The case study refers to the presentation of the organizational structure of the XYZ IT Infrastructure and Operations Division, its relationships with the other Divisions of the organization, as well as existing methods and communication tools using the DCSYM Case Tool software.

Subsequently, the observations on the current situation and the proposed improvements with the expected results are outlined. The proposed organizational structure is presented using the DCSYM Case Tool software as well as the design of its proposed organizational structure using the VSMod software.

Finally, suggestions for implementing change are defined.

Keywords: DCSYM, VSM, VSMod, Vensim, Camunda Modeler

EA-04

Design and implementation of an Energy Management System in Food Retail company.

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EXTENDED ABSTRACT

Energy is a very critical factor for the operation of every organization today. World energy consumption continues to rise, it has more than doubled in the last 40 years and is projected to increase a further 30 % by 2040. As it is known energy is the major driver to climate change making up nearly 60 % of the worldẏs greenhouse gas emissions. Therefore, it is necessary to take actions to in order to manage the energy consumption which not only helps the planet but also it saves money for organizations and society as a whole.

In particular, the need for more sustainable or green buildings puts pressure on the operating and capital budgets since most improvements require some amount of capital investment. In order to decide for the implementation of efficient improvements it is necessary to have a reliable Control system, which is going to give us reliable data in real time.

The Energy Management System is going design to help the organization to improve its energy performance through efficient and smarter use of its energy-intensive assets. Furthermore, the improvement of energy performance can maximize its use of energy sources and energy-related assets reducing cost and consumption.

Using the DCSYM and the VSM tools we will analyze the current situation of the operation procedure in the super markets, Distribution Centers and Cental Offices we will show the communication flow between the equipment, HVAC system, refrigerators and lights with the customers and the personnel as well as the internal and external environment. The results of the DCSYM Methodology will help us to design an Energy Management System for the whole company.

Moreover, it is necessary, to design and implement an efficient Management system, which will take into account all key factors and the interaction of the environment which are the main drivers for the Energy Consumption in stores, such as external temperature, occupancy, operation duration, customer needs. They always give consideration to supplying the most efficient use of available resources, space, customers, requirements and safety for the stores.

During the structure phase of a process oriented control system it is necessary to describe all steps of processes (leading processes, core processes and support processes). Using the Viable System Model of Stafford Beer we will analyze the

influence between all steps of this system. We will design an organization structure and a role model for tasks, competence and responsibility.

To sum up, in order to design and install an efficient Energy Management system will help the food retail company to manage better its energy use and will improve its productivity. Moreover, we are going to design and implement an energy policy in this system, setting achievable targets for energy use, and planning actions in order to reach them and measure the performance of this system. In addition to this we are going to implement new energy-efficient technologies, reducing energy waste or improving current processes to cut energy costs.

Keywords: Retail market, Facilities,EMS, DCSYM, VSM.

EA-05

Systemic methodologies through the assessment and implementation of the strategic model of resources and opportunities in PORTOKALIDIS S.A.

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EXTENDED ABSTRACT

In today's business environment, the high demands for value-added products and the right location are constantly increasing.

Customers today are looking for the best quality, innovation, the best design, the widest variety, the perfect service and all at the lowest price, effort, time and the least risk. Every business that operates today in this highly competitive environment needs an immediate need to devise a strategy that will provide it with the prospects for sustainability and profitability.

An area of interest in the present survey is the presentation of methodologies developed through Systematic Theory and their application and utilization in the strategic model of Resources and Opportunities in the company "Portokalidis SA", which is active in field of the frozen dough products and puff pastry.

The primary purpose is to utilize the strategic Resources and Opportunities model to create a Comparative Advantage and Value to the Customer.

This survey will be the subject of discussion and reflection on the management of the business, the strategy to follow consequently the possible reorganization of its structures in order to achieve the creation and maintenance of its comparative advantage in an economic environment which is constantly changing.

Changes that may occur, following an investigation, will also provide guidance on the parameters to be taken. The proposals will be clear, understandable and documented and will be based on systematic approaches based on DCSYM methodologies and VENSIM PLE software.

In the century that we are going through with the many significant changes that have been observed in the business sector, the strategy that every business will follow will contribute to its success or not. Within it, the important role is played by the Resources and Opportunities that it contains and focuses on areas that are

important for its smooth functioning. With proper handling and utilization by business executives, they will be able to contribute to their upward competition.

The objectives of this thesis are the following:

1. The diagnosis of the current situation of the company in the Greek market compared to the competition.

2. Identify the resources and capabilities of Portokalidis SA and make the most of its management and executives to the best of its ability.

3. Identify the sources of its Comparative Advantage and use it as a tool for its uniqueness against competition.

The reasons that led to this issue were as follows:

1. The timeliness of this topic and the benefits it can offer by applying theoretical models to practice.

2. Assistance that can be given to the management of the company in order to better manage its Resources and Capabilities and to create a Competitive Advantage.

Keywords: resources, opportunities, systemic, theory, sustainability

EA-06

Systemic approach for the organizational structure and the operation of the Piraeus Bank Group before and after its merger with other banking groups.

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EXTENDED ABSTRACT

In the present work, an attempt is made to analyze the organizational structure and operation of the Piraeus Group during the mergers and 3 years after them. In this context, Systemic Theory and Thinking are presented in detail in Chapters 2 and 3 of this paper. In Chapter 4, using all the available data collected by the bank, these changes are analyzed using the DCSYM system methodology. Finally, chapter 5 discusses changes that have been made with another systemic methodology of VSM. The goal of this work is to use these systemic methodologies in order to "emerge" problems presented by the organizational structure of the bank and to propose ways of solving these problems.

Keywords: Piraeus Group, System Analysis, DCSYM, VSM

EA-07

Business Intelligence, a rising area that's obtaining progressively well-liked for enterprises.

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EXTENDED ABSTRACT

Business Intelligence (B.I.) is a rising area that's obtaining progressively well-liked for enterprises. The necessity to enhance business method potency, to react quickly to changes and to fulfill compliance is among the most drivers for B.I. refers to the appliance of Business Intelligence techniques to business methods and includes an oversized vary of application areas spanning from method observation and analysis to process discovery, correspondence checking, prediction and improvement. This presentation provides an introductory summary of B.I. and its application areas and delivers an understanding of the way to apply B.I. in one's own setting. Particularly, it shows however method mining techniques, like method discovery and correspondence checking, may be accustomed support method modeling and method design. Additionally, it illustrates how processes may be improved and optimized over time using analytics for explanation, prediction, optimization and what-if-analysis. Throughout the chapter, a strong emphasis is given to describe tools that use these techniques to support B.I. Finally, major challenges for applying B.I. in practice and future trends are discussed.

Keywords: Business Intelligence, Methods, Processes, Technologies

EA-08

An integrated model of broad business change by using systemic methodologies DCSYM and VENSIM.

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EXTENDED ABSTRACT

The subject of this masterŷs thesis is how to proceed in structural changes to an organization such as a big enterprise, by changing its modus operandi and even more by changing its culture, which is the very core of each enterprise. We aim at the principles and the values which define the organization, the appropriate use of systemic methods and tools that enable the optimal allocation of available resources and the seamlessly operation of the organization.

This thesis begins with a definition of Strategic Management and Strategic Planning. Next, we provide a complete description of System Theory, in a simple and understandable way, so that everyone can grasp the very essence and necessity of systemic science. After all, our living is systemic, though most of us we ignore this perspective.

Next we depict the Systemic Theory methodology, DESIGN & CONTROL SYSTEMIC METHODOLOGY (DSCYM) and VENSIM software. An analysis follows, accompanied by the integrated implementation of the two methodologies. Our exercise uses real data and aims at the radical restructuring of the finance unit of a financially strong corporation that sustains operating profitability. Next is the analysis and the combined implementation of these two systemic tools, with real data which concerns the radical change of a companyŷ financial department, with sustain operating profitability. The novelty on this masterŷs thesis is that provides a complete guide, readily applicable, for all companies, irrespective of size and activity, on how they need to operate in order to alter their strategy, either partially or completely, at individual units or segments (There is supporting material, files ready to be used, with small modifications, depending on the specifications of each organization, of DCSYM, VENSIM, and EXCEL available). The technological developments, the globalization, the instant access to information, capital and human resources make imperative, more than ever, the ability to adopt in a rapidly change environment that is constantly transforming at such high speeds that man can no longer fully conceive.

Keywords: DSCYM, VENSIM, GANT, SWOT, Systemic Theory

EA-09

Applied Systemic Methodologies in a TEDx University Organization.

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EXTENDED ABSTRACT

The purpose of this analysis is to examine the case study of the annual event organized by a University TEDx Organization. It is a seven-month project that aims to organize a conference where innovative ideas will be heard and successful individuals will have the opportunity to share their worldview and inspire the new generation. The main event is combined with a number of innovative workshops and events taking place close to the venue that complete the attendee's experience and aim to make it unforgettable.

This case study is particularly interesting, since it is based on a real situation and a 7 month procedure that requires excellent project management. Furthermore, the interaction between young people from different backgrounds, without significant work experience, who work completely volunteerly in order to organize this event is a real challenge.

The systematic mapping of this project aims to provide a comprehensive analysis that identifies past mistakes and proposes solutions to improve the organization and communication of team members in the future. The most important thing about this systemic analysis is that it is a perfectly realistic and therefore the results can be used to practically imporve the performance of the future organizers.

Keywords: TEDx, Project Management, systemic analysis

EA-10

Systemics And Business Intelligence For A Sustainable Tourism Industry.

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EXTENDED ABSTRACT

Today, no one can deny that the world is changing, and changing very fast. Technology, education, science, environment, health, communicating habits, entertainment, eating habits, dress - there is hardly anything in life that is not changing, some changes we like, while others create fear and anxiety. One main reason is that new scientific and technological results and thus new knowledge are developed at an exponential rate. As a result of this large amount of data are created every day. Digital data is now everywhere—in every scientific and technical sector, in every economy, in every "organization" and user of digital technologies.

Systemics and Business Intelligence (BI) have emerged as two new separate scientific approaches that address many of the problems that have been risen with the Big Data Driven World (BDDW). The Tourist Industry has had a great impact of all these changes. In this paper the changes of the Tourism Industry that are the results of the emerging new Big Data Driven World (BDDW) are considered and analyzed.

How are dynamic IT operations affecting the tourism culture? What do the tourism businesses need to understand about BDDW and Artificial Intelligence (AI) to successfully drive their operations into the future? Risks that previously stayed inside organizational units, such as IT Ops, now leak across domains, influencing decision-making for the entire Tourism Industry. These factors, including process and system change, will try to pull a tourism organization in multiple directions at once; only a unified data management system with the intelligence to extract operational insights can drive positive tourism business changes.

The challenge of automation to the tourism industry will be considered and analyzed. Most people believe that automation Is Everything. However automation by "policy" only won't be enough; even run books will become obsolete. Data and results are always changing especially on today's tourism industry. So the simple classical automation will not drive meaningful changes. Artificial Intelligence (AI) can be used to drive automation policies and frameworks, with the potential to reduce errors and integrate disparate systems of a tourism organization which previously required multiple points of oversight.

The trend towards using AI for data understanding is driving Business Intelligent services into other parts of the tourism business, as well. Rather than just for correlating system and operational data, AI is being adapted to "business process optimization". Moving forward, IT operations can begin to run themselves, led by deep data analytics. Alerting and response processes will automatically use their own feedback to update the system's intelligence, identify emergent trends, and take actions to deliver improved operational results. Thus the need to use Systemics and Business intelligence (BI) methods in the tourism industry is a must. This paper will provide some of these methods with specific examples in the tourism industry (e.g. in maritime and coastal tourism).

Tourism business impacts will come from system "intelligence" rather than manual processes. Efficiency in operations management is thus derived from the "entire system" from the whole business community, including the people themselves. What was previously the IT culture is rapidly replaced with a combination of self-adapting processes and workers who focus more on value than on plumbing. Transforming the tourism enterprise from silos into integrated platforms will propel the business forward. The resulting system will also drive cultural change at an accelerated rate, perhaps faster than the tourism worker community is prepared to accept, but informed by real data instead of executive intuition! Methods and practices of Systemics and Business Intelligence (BI) will be very useful trying to understand and accept these changes. This would help to generate a sustainable tourism industry.

EA-11

Optimization of specific Greek Police Business Processes using Systemic Methodologies.

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EXTENDED ABSTRACT

Over the past few years, a trend of modernization in business processes has been observed in the European Union. Europol and Cepol are two of the EU agencies that have improved their processes in order to build their defense against crime. But, due to the fact that Europe consists of societies with different cultural, educational and geopolitical positions, this defense must be built according to different criteria. For example, countries that are responsible for the EU borders' safety management must implement strict policies, especially on wiping out crime and on illegal immigration.

Our study is focusing on the process that is being followed by the executives of the Greek Police, when they have arrested a perpetrator and they have to bring him/her to Justice. The reason why we have chosen this process specifically is that by improving it, Greek authorities could retain daily about 109 policemen who could be used in patrols.

Studying the Greek Police statistic tables, we have found that almost 370 burglaries and thefts are being committed daily (crimes with a prison penalty from six months up to two years). So, the improvement of the process that we have mentioned above could also lead to a benefit of 5.57 euros for each convoy of those 370 perpetrators.

In this study we have used Systemic methodologies to describe the problem, to design it, to present the possible improvements and to give prominence to the necessity of creating a new police department, responsible for similar studies in order to modernize other processes and to improve the methods that are being used to defeat crime.

We must also mention that we will present the structure of the Greek Police using the Viable System Model, a tool which identifies and diagnoses the functions required for the viability of the Organization. The next step is the presentation of a System Dynamics model that simulates the way that particular social phenomena, like: (a) the Economic Crisis, (b) the taxation, (c) the reduction of the State Expenditure on Equipment, (d) the Illegal Immigration and (e) the policemen' and political immorality, affect the Crime Rate. After taking into account the results of all those tools, the necessity of creating a new police department is proven, and through some metrics we propose, our study is actually complete and will eventually be donated to the Greek authorities.

EA-12

Adaption of a Business Intelligence Framework, in Primary and Secondary Education Institutions.

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EXTENDED ABSTRACT

This work will address the benefits of adopting an integrated Business Intelligence (BI) system by primary and secondary education institutions. Academic institutions today generate large amounts of information, in the form of academic results, student population and class sizes, fees charged, average daily attendance, and extended program offerings (languages, music, fine arts, sports, etc). They are also the recipients of a plethora of data from their environment, in the form of legal and regulatory requirements, and educational, vocational, societal, and demographic trends and patterns. This vast amount of data is of little use to the stakeholders associated with the institutionsÿ function, i.e. students, teachers, employees, parents, ministry of education and government, absent a structured process and tools that convert data into information that can support sound decision-making. Further, academic institutions operating within the boundaries of limited resources, often lack the ability to transform this data into the organizational knowledge that is necessary to evaluate their overall performance.

Academic institutions have long been required to report to their stakeholders, relative to their activities, results, and achievements. This reporting is often a burdensome activity that consumes considerable administrative and financial resources. BI refers to technologies, applications and practices that are utilized in the collection, integration, analysis, and presentation of business information. Use of BI, can enhance information accuracy, reduce the reporting burden, and support better decision-making, in any organization, company or institution. The adoption of BI by academic institutions will mitigate the operational complexity that is associated with its operation, and will steer its focus on improving the competencies that contribute most to achieving desired outcomes. Furthermore, a well-managed BI framework can assist primary and secondary education institutions to dramatically improve administrative effectiveness and efficiency, academic performance as well as student / teacher experience and satisfaction and can foster a wider culture of accountability and data-driven decision-making.

Keywords: Education Institutions, Business Intelligence

EA-13

The use of systemic methodologies so as to improve the management of a University research center.

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EXTENDED ABSTRACT

The University and Research are inextricably linked. The present study was developed with the conviction that each system is also a living organism, which due to the complexity and dynamic interaction of the parts requires systemic investigation through simulation models that correspond to the current reality.

In this context, systemic theory and thought are examined in depth. With the help of Systemic Design and Control Systemic Methodology (DCSYM) to map the existing status of the University and the operation of the Research Center in particular, thoughts on the use of DCSYM in the current situation, appropriate improvement proposals and the design of the Improved Proposal.

In the second part with the help of System Dynamics and VENSIM Software we have developed a dynamic simulation model, which we will try to make a prediction for the next 200 months of the staff employed by the University on the research field and what impact it will have. Through our dynamic model, the stakeholder will have all the information he or she needs and the knowledge on how to optimize the organization and be able to make easier decisions. The purpose of this work is to enable the Organization to have a holistic assessment and a dynamic assessment of the future.

Keywords: VENSIM, DSCYM, SYSTEMIC ANALYSIS, SYSTEM DYNAMICS

EA-14

Systemic - Cybernetic Approaches for the development of a National Information System for the Management of Educational System.

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EXTENDED ABSTRACT

This paper aims to create a systemic image of the creation of an information system for the management of the educational system at a national level. For this reason, it is divided into three main themes: General Systems Theory, convective grid data - information - knowledge and finally that of the information management system. An extensive bibliographic review is being carried out in all three themes, in order to obtain data, which is then attempted to be interpreted and connected to the other themes, thus making a synthesis of the study through the systemic way of thinking. The link among the above themes and their interaction with one other and with the other elements that have emerged during the bibliographic review highlights the added value of the system approach to examining the complexity and diversity of the subject under consideration. The exploration of the data-information-knowledge themes highlights the important role of the educational data concerning the sustainability of the educational system in the contemporary demands of the future. Improvement of decision-making, accountability of human resources, school autonomy, and an increase in the efficiency of the educational system and its individual subsystem, emphasizes the importance of their use. The adoption of a cultural exchange and use of information, against the rapid changes brought about by the technological revolution, is considered necessary for the sustainability of school organizations. The exploitation of educational data through EMIS, through an intelligent management system that allows systematic monitoring at each hierarchical level of all the functions of the educational system, facilitates the conscious design of the dynamic educational policies. This study adopts the systemic way of thinking and concludes that it should be an integral part of the philosophy of policy-makers responsible for the design of education.

Keywords: systemic, complexity, EMIS, educational data, sustainability

EA-15

Systemic Approach in the Operation of the Back Office - Retail Division.

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EXTENDED ABSTRACT

The purpose of the project is to present and analyze the operation of the Back Office - Retail Division, in a company specializing in the trading and production of electricity.

It consists of two parts, the first will briefly refer to the company, its historical path and its dynamics in the energy sector as well as its regulatory institutions.

The second part will provide a systemic approach to the operating structure of the back office registration and management department, capturing it as a system using the DCSYM tool. The purpose is to imprint the structure of the system, the relationships of its subsystems, as well as the relationship-interaction with the environment.

Subsequently, the process of receiving a customer's request for power through the company's web CRM will then be presented and simulated using the VENSIM tool analyzing its strengths and weaknesses and the variables that affect it.

Finally, the most optimal solutions for optimizing the process will be presented.

Keywords: Systemic Methodologies, DCSYM, Document Management, System Dynamics

EA-16

Business Intelligence Technology to Support the Controlling of the Business – The Case of a Flour Manufacturing Business.

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EXTENDED ABSTRACT

Business intelligence (BI) is an umbrella term that refers to information systems that transform raw data into meaningful information and help reduce uncertainty in decision-making. A large number of Business Intelligence solutions nowadays exist to support the operations and strategy of contemporary organizations.

This presentation demonstrates the application of Microsoft Power Business Intelligence (BI) solution in a wheat manufacturing business through the lenses of the Viable Systems Model (VSM). It places emphasis on how the dashboards and reports enabled by the BI solution led to a better control (System 3) of the business and to wiser business decisions.

Microsoft Power BI is a business analytics solution that has been recognized as a Leader in both the Analytics and Business Intelligence Platforms 2019 Magic Quadrant, as well as the Forrester Wave: Enterprise BI Platforms Q3 2019. Microsoft Power BI lets you visualize corporate data and share easily insights across the organization. It allows you to connect to any data source and bring corporate data into meaningful dashboards and reports. In the case study presented, the data source used by the BI solution was SAP Business One (SAP B1), the global ERP solution provided by SAP for SMEs.

According to Stafford Beer and the VSM, System 3 is responsible for internal and immediate control of the organization. Practical examples of how the BI solution supports the control of a range of business functions such as sales, purchasing, logistics and finance will be demonstrated.

System 3 also supervises the co-ordination activities of System 2. Examples of how the introduction of the BI solution helped the coordination and resource management of the 4Ms (men, material, money, machinery) suggested by Stafford Beer will also be presented.

Finally, the concept of algedonics will also be related to the alerting signals generated by the BI solution.

Keywords: Business Intelligence, Controlling, VSM, Cybernetics

EA-17

Systemic Approaches and Business System Dynamics with Applications: Improvement of Vensim PLE Software Introducing Systemic Time Handling.

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EXTENDED ABSTRACT

This paper presents an approach to selected aspects of Systems Thinking and presents systemic methodologies and tools appropriate to support and improve the management of complex and demanding situations and phenomena arising from the complicated interaction of complex systems.

We present selected elements from the General Systems Theory in order to establish an adequate understanding of the concept of systems and we document through our point of view the need for development of systemic management models.

The next section is dedicated to methods to represent and study a System and refers to the DCSYM, which is a two-dimensional visualization method with complex layering capabilities of multiple Internal Structures of a System and the links of these structures and is presented a real world structural and operational reconstruction of an IT company (A.C. & E. Hellas SA).

In the next section is introduced and developed the concept of Dynamic Systems and the need to develop methods, that support the ability to improve both the perception and management capability of Dynamic Complexity of a particular System, but, most importantly, the complex (up to an uncontrolled degree) interaction of multiple Systems. System Dynamics is used as an integrated philosophical and applied System for understanding and managing Dynamic Systems and is supported by the development of simplified simulations (models) of the Dynamic Systems under consideration/ management.

Hereinafter we refer to Vensim software (PLE version), which is a complete Function Simulation software of Dynamic Systems, where we build in a step-by-step way the development of a Production Line Simulation (characterized as "simple" as it refers to the production of one type of product), which is structured by a multitude of other Systems (as the Physical Infrastructure Subsystem, the Human Resources Subsystem, the Demand and Sales Subsystems).

The result of a fully constructed Simulation is expressed in straightforward and perfectly understood Income and Profit values, whereby the model becomes an important tool for better business decision making ('Business Intelligence').

The simulation and results are presented using tables and graphs created by Vensim PLE and by visualizing the full model during its actual execution, with appropriate comments being given on a case-by-case basis followed by comments, evaluations and proposed improvements.

All the previous are followed by a study concerning with the implementation of the "Systemic Time Handling" of the Vensim PLE and presenting the excellent flexibility that the Vensim PLE acquires through the availability to use and "intervene" to the Systemic Time variable.

Based on "Systemic Time Handling Availability" are developed and presented:

Models using Systemic Time Delay and/or Advance such as complex functions (useful as rate inflow/ outflow to/ from transformation processes to support Dynamic Systems Simulations), the well-known " Feedback with Time Delay" Archetype, the evolution of the Model "Single Production Line and Sales" to a "Single Production Line and Sales with Systemic Time Handling" and, ultimately, a model for the "Estimation of commercial ship fuel consumption as a function of changing cruise and weather conditions".

EA-18

Fuzzy Cognitive Maps And Product Planning Through Business Intelligence.

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EXTENDED ABSTRACT

The current uncertainty of the markets as well as the unfavorable economic situation has forced many businesses to want to know with certainty in which products they will invest and in their optimal design of these products in order to achieve the maximum possible profit with the minimum possible risk. Our aim is to create an automated tool with the help of Fuzzy Logic and especially of Fuzzy Cognitive Maps (FCMs) so that any business that uses this tool can decide intelligently if it is worth investing in a new product or not. A limited but illustrative number of specific applications of Fuzzy Cognitive Maps in diverse Business and Management (B&M) systems, such as e business, performance assessment, decision making, human resources management, planning and investment decision making processes is provided and briefly analyzed. The limited survey is given in a table with statics of using FCMs in B&M systems during the last 20 years. The limited survey shows that the applications of Fuzzy Cognitive Maps to today's Business and Management studies has been steadily increased especially during the last 9-10 years. The product under this study is the pedelec bike Ideal Orama by Nikos Maniatopoulos SA. By using the new model of FCMs in the design of the above bike we seek to make a first assessment of whether the company is worth investing in this model as well as test the new mathematical model which gives us more flexibility and reliability. This whole process of transforming raw data from the experts into useful and meaningful information for the company belongs to the category of Business Intelligence (BI). Interesting conclusions and future research directions are highlighted.

EA-19

Decision Making Process in Strategic Information Systems: The Use of Fuzzy Cognitive Maps.

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EXTENDED ABSTRACT

Fuzzy Cognitive Maps (FCMs) constitute a methodology that examines complex situations, which involve uncertain or fuzzy descriptions, and analyzes the decision-making process. FCMs are abstract representations of real-world systems and explore the behavior of a system in terms of interacting concepts, where each concept represents an entity, a state, a variable or a characteristic of the system. A fuzzy cognitive map presents a graphical representation through a signed directed graph with feedback, consisting of nodes and weighted arcs which represent the causal relationships that exist between the concepts. Each concept is characterized by a number that represents its values and is calculated through the transformation of a fuzzy value or the fitting of a numeric value to the desired interval. The values of the interconnectionsŷ weights are initially linguistically defined by experts and then transformed into values through specially designed algorithms, capturing the accumulated knowledge and experience from experts who know how the specific system behaves in different circumstances.

FCMs can be used to model and simulate systems in a wide variety of application areas, because of their capability to handle complexity with much and/or even incomplete or conflicting information. This study aims to examine the use of FCMs in the field of Strategic Information Systems, i.e. the strategic use of information technology and information systems that can enable a firm to create or sustain competitive advantages. Main concepts of FCM, originated from theories of fuzzy logic, neural networks, and evolutionary computing, are presented and explained. The application of FCM as a decision and modeling tool in the context of Strategic Information Systems is discussed and a FCM concerning decision-making in the context of Strategic Information Systems is produced. The resulting FCM tries to provide a better understanding of the factors affecting the decision-making process and their relations.

Keywords: Fuzzy-Cognitive-Maps, Information Systems, Strategic Management

EA-20

Digital Governance and Artificial Intelligence in the Evaluation of Public Administration and Civil Servants.

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EXTENDED ABSTRACT

Its problematic proposal approximates the effectiveness of the work of civil servants in a transparent, objective manner through the digital modernization of the functioning of public administration structures and services. Ongoing modernization expects to reduce administrative burdens resulting from mergers, acquisitions, structures and services through the use of digital governance and technical intelligence. The implementation of the civil servants mobility and evaluation system was set up to serve the needs of the public sector and the Citizen / Client aims to support-upgrade the capacity of public administration in line with international cost-benefit metrics. It is the result of the operation of an international evaluation system which is constantly changing to the requirements of the times.

ASEP, the institution of the selection of civil servants and the implementer of the evaluation through the mobility of civil servants (Law 2190/1994 and 4440/2016), is transformed into a "Super-institutional" Independent Authority, with Law 4590/2010 and the provisions of Article 20 Law 4325/2015 . With the "Public Services Registry and other public administration bodies" the institution delineated human resources to meet the needs of managers and to fill gaps in the Public Sector Personnel Registry. The final demarcation and mapping of public administration (Law 4622/2019) requires the proper allocation and management of human resources (Law 2008 / Articles 103 and 104) reinforced by the recent recruitment process legislation for ASEP (Law 4590 / 2019). The result of their implementation is the reduction of administrative burdens for a centralized and decentralized public administration under the Constitution. In detail, Law 4622/2019 refers to the functioning of Public Administration as it seeks to safeguard administrative normality, economic and social development.

The evaluation of the candidates and civil servants in a Registry was initially implemented by Law 1586/1986, which combined the provisions of PD. 611/1977 and Y.K. (W.1811 / 1951). The draft "Single Digital Impression of Public Structure and Personnel" bill is expected to be completed for the complete and unified mapping of the public sector with transparency and objectivity of the recording of public needs and coverage of human resources that will be updated in the law. Public administration appears to be "open" to the application of new technologies such as Technical Intelligence. Implementation of successful strategy in MS of the European Report on Artificial Intelligence {SWD (2018) 137 final}] that Technical

Intelligence (TN) is a cross-border co-operation in addressing the opportunities and challenges of a new era that will act as a Mediator ":

In conclusion, it follows from the above that modernizing public administration in the context of transparency and integrity contributes to streamlining the state function by adhering to good practices and tools to combat polygamy and maladministration aimed at reducing administrative burdens. Providing unified mapping of public administration with digital tools and of Technical Intelligence simplifies its operation that will give economic and social development to the country.

Keywords: Public Administration Civil Servants , Evaluation, Digital Governance

EA-21

BASEL III and real economy.

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EXTENDED ABSTRACT

The subject of the diploma thesis is related to competition, profitability and instability of the banking sector and how they contribute to the various regulations and directives issued by the European Central Bank (ECB). It is quite interesting subject because as we know the banking system is the heart of modern market economy. Banking institutions provide payment services are essential for all financial transactions, accept deposits of savers and lend to individuals and businesses for consumption and productive purposes, thereby playing a key role in developing the economy. At the same time, banks are vulnerable to bank jitters (bank runs) that may lead to depositors in simultaneous massive withdrawals of their deposits, and therefore in their collapse (Diamond and Dybvig 1983, Gorton 1988). The economic cost of such a development is extremely negative since it is limited to the bank in trouble, but extends to all operators with this bank, including individuals, businesses, or other financial institutions (Goodhart 2010). Moreover, the risk of contagion to other market players has increased in recent years as the interdependence, especially of large financial institutions, has been intensified through increased trade and partnerships in the interbank market, in derivatives markets and payment systems (Carletti and Hartmann 2002).

The point, however, is that in addition to achieving financial stability, banks are faced with the challenge of paying the price through higher financing costs leading to the need to maintain a higher and more strictly defined capital adequacy. Certainly, the financial cost is the minimum cost as many other factors such as bank taxes or additional capital requirements in the case of systemically important organizations have not been taken into account while the lack of precise liquidity levels is still an important issue in this regard.

Therefore, an appropriate balance should be struck between the benefit of the higher medium-to-long-term stability of the system and the short-term (primarily) costs of adapting to new data in terms of its influence on the real economy and especially in terms of GDP.

In other words: a financial system that will not work to the detriment of citizens, in the sense of state intervention in the event of a credit event, but will instead operate to serve them. (Jensen Anne E., Beres Pervenche)

Keywords: Basel III, Banking, Real Economy, GDP

EA-22

Organizational Transformation Related to the General Data Protection Regulation in Retail Industry.

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EXTENDED ABSTRACT

The European Union's General Data Protection Regulation, enforced on May 25th 2018, affected all organizations that handle Europeans' personal data - no matter where it is stored. The aims of the regulation are to protect the fundamental rights and freedoms of natural persons and to enshrine their right to protection of their personal data as well as the free movement of these data.

GDPR is rather a business issue: organisations in every sector collect, access and use personal data for many purposes – hiring, marketing, sales, customer service and so on. There has been a growing emphasis on taking a systematic approach to managing data, which can help organisations make decisions on the basis of accurate, meaningful data, as well as for improving how they personalise communications to their customers. There are many opportunities within retail for tailored offers and promotions to improve business. However, these opportunities rely on personal data, so it is essential that organisations start their compliance journeys. Organizations need to transform their IT and business processes in order to reveil the opportunities risen.

Keywords:GDPR, Organization, Retail, Personal data, Regulation, Protection, Transformation

EA-23

TQM Models applied to Small Medium Size Enterprises.

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EXTENDED ABSTRACT

Quality can be defined as the "never-ending improvement of a firm's extended process" (Goh, 2000)

Quality is initially introduced in a company through quality assurance (ISO). It involves the organization's gaining of a third party's approval for the quality system it implements.

People, continues improvement, processes and customers are the main elements used by TQM in order to establish a "quality" environment (Price and Chen, 1993)

Focusing on SMEs was due to the difficulties they realize in TQM implementation, due to their limited resources in human resources, funding needs, expertise and know how. These limitations have as a consequence their increased operational costs.

The idea to adopt a quality model (NBNQA, EFQM) may be a way to increase a company's value but the shortcomings with these models being adopted by SMEs, like being expensive, not considering the real needs of an SME, the language the models are using with for the moment they were design for large companies it appeals to those and not to an SME terminology (Dandekar, et.al., 2012)

According to Dandekar (2012) a quality model for an SME should be simple, systematic, easy to understand, outlined and definitely providing a planning tool for its implementation. A model should be applicable to different industries, different cultures and different economic environments. What one should look from a model is to be capable of identifying the TQM components and how these are connected to each other in order to realize the successful implementation of TQM.

As being denoted by Saunders and Preston (2006) a series of models have been developed to examine the level of TQM application, but as they point out, all of them were more descriptive, meaning that they were not presenting the logical relationships that exist between each and every different components used in the models. The Joiner's model (the triangle-1995) and the Juran's model (the trilogy-1989), the overall framework for excellence model by Oakland, and of course the Saunders and Preston S-P model are some of the models developed (Oakland, 2001; Saunders and Preston, 2006).

The S-P model developed by Saunders and Preston is trying to "identify and describe all those activities that are necessary in different organizations, including

SMEs in order for continuous improvement to occur and for benefits to be derived from TQM" (Saunders and Preston, 2006)

The S-P model was for the first time applied to manufacturing companies but Saunders and Preston consider that the model gives the theoretical basis which can be applied and to other industries of which SMEs is one of them.

The use of a quality model will give the structure of the research conducted on the Greek, ISO certified SMEs, and will identify the spread of TQM applicability, meaning how wide TQM is applied to different factions of an SME, as well as the environmental factors that need to be influenced in achieving a successful implementation of TQM.

Keywords: TQM, SMEs, CSF, ISO, Quality, Performance

EA-24

The systemic approach of political Communication

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EXTENDED ABSTRACT

The main purpose of the current research project is to identify the main reasons that motivate people to vote. The declining trend and willingness to exercise the right of voting amongst citizens in recent years is a direct blow toDemocracy and the representation of political parties in Parliament. Elucidating and understanding the causes for this trend is crucial for political parties in order to re-organise better and reconsider the content of the political messages, motivate voters and importantly attract new potential voters. The key question is how the communication teams of the political parties could reduce the loss of voters and what tools they could use in order to enhance both the parties image and identity. This is particularly important for both the governing party, especially at times of crisis, but also for the opposition during those times. The current research project discusses the various options a political party or organization can utilize at times of crisis by employing and using tools normally used in Systemic Management and Political Marketing. It is essential at times of crisis that the political establishment adapts to new conditions and effectively deploys strategic options and pathways that aim to reinforce Democracy and its basic principle of Representation.

Keywords: DCSYM, Vensim, Political Communication, Political Campaign

EA-25

Systemics for Business Intelligence: An application in a museum shop.

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EXTENDED ABSTRACT

One important emerging market where theories of market research and consumer behavior could be explored are museum shops, where visitors benefit not only from a variety of cognitive and recreational experiences, but also from consumption of cultural goods. The museum shop is considered in modern literature not only an integral part of the overall museum experience, but also an important source of revenue that can even support the museum's entire operation.

The organizational charts of dynamic and successful museums worldwide show the existence of a flexible mechanism of economic autonomy with distinct boundaries in curatorial and administrative division. A brilliant example is the Museum of Modern Art of New York (MOMA), which when was closed in 2001 for three years due to reconstruction; its store remained open, retaining 60% of its previous annual revenue. Unfortunately, referring to the Greek state policy on museums, the average visitor in Greece spends only € 0.2 in the shop, while in France he spends € 6.5.

This paper will investigate whether business intelligence can be enhanced by systemic tools. Specifically, whether "systems thinking" approach through simulation and modeling can power the business dynamics of a museum shop and design effective interventions. Therefore, the contribution of business intelligence to the better organization of a museum's sales could be evaluated by taking advantage of the location, time spent in the location and the flow of visitors within the museum. Using systemic methodologies would investigate the behavior of visitors and the extracted data will be used to develop dynamic models that provide information on potential consumer behavior so that the marketing department of the museum can make business choices and appropriate promotions of potentially desirable products from the points of sale with the ultimate goal of satisfying visitors and increasing the profitability of the companies within the museum.

Keywords: system dynamics, museum gift shop

EA-26

The Predictive Sustainability and Analysis Scheme of the Critical Production Systems.

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EXTENDED ABSTRACT

Maintaining a cluster of high workload production systems requires a reliable status monitoring scheme put in place. Deploying adequate workforces to monitor these critical systems' status measurements according to the predefined standard operating procedures is an inevitable approach. Unfortunately, this approach cannot provide enough lead-time to preemptively manage the situation before the unusual incident occurs.

The research subject is a semiconductor manufacturer who uses a distributed cluster database system of twenty computing servers more. This cluster database system will continuously report its internal status to a central management console and write the warning or error codes into a huge log file whenever an unusual incident occurs. This study collected the status data periodically from a number of critical production systems and merited them with the unusual incident log to build a holistic tracking view against the warning or error codes within.

The mission challenges of this study were: (1) how to process with these quickly increasing huge data; (2) how to develop an effective system to collect those status measures from the management console; (3) how to record these huge amount of the status information; (4) how to extract those unusual incident codes from the associated log file; (5) how to determine the appropriate time period to collect the status data; (6) how to reduce the dimensions without compromising the accuracy of prediction; (7) how to derive a simple human-readable measure about the overall health of the systems; and (8) how to report the predicted results to the duty workforce.

This objective of this study is to explore what status factors would potentially lead the following unusual incidents by applying a number of statistical procedures and the machine learning methods. The major contribution of this study is to disclose a proven end-to-end system framework from the data collection to the predicted results revealing. Finally, the manufacturer was able to manage these critical systems preemptively through the examination of these predicted results.

EA-27

A Viable Systems perspective for managing urban complexity: Aspect Based Sentiment Analysis and Fuzzy Cognitive Map for supporting the decision-making.

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EXTENDED ABSTRACT

Purpose. The growing complexity of urban landscapes and the faster technology evolution make central a rethink of urban governance, in order to understand how decision-making processes are reframed and boosted by the application of smart technologies and automatized research techniques to big data management. Following a systems perspective, the challenge is always more focused on the definition of new models of decision-making for urban contexts, based on a participatory logic, which can increase actors' engagement within the same context and harmonize their objectives with community's overall goals. In this regard, adopting the interpretative lens of the Viable Systems Approach (VSA), this work aims to propose a decision-making support model for the urban governing body for framing the urban collective perception of the actors (e.g. citizens and tourists) regarding the city and the assets in it, allowing for greater awareness of the interventions that could be aimed at solving urban problems.

Methodology. The proposed model follows a robust and innovative methodological framework based on a big data-oriented approach. By leveraging on the Aspect Based Sentiment Analysis (ABSA), an advanced sentiment analysis, for evaluating the sentiment expressed in the reviews by online users regarding the urban elements and performing a scenario analysis through a Fuzzy Cognitive Map (FCM), the impact of users' opinion about city issues is analyzed.

Findings. A large-scale text analytics study has been conducted on a selected city. The results lead to an exposition of shared evaluations on the levels of "sentiment" as perceived by the community in relation to urban points of interest through summary sheets. By carrying out a What-If simulation it is determined how the current collective perception affects other important urban issues and how, changing the collective perception through targeted interventions, the urban context will react.

Research limits. Since the sample is particularly large, the automated collection of people's reviews has prevented a more in-depth analysis of users' thoughts and opinions through a qualitative approach.

Practical implications. The model can concretely support the urban decision makers offering in a very short time summary sheets regarding the level of sentiment and scenario analysis for understanding how the collective perception of the city influences important urban questions and how the governing body should intervene for aligning it to an ideal city. Furthermore, the proposed model promotes a common language between urban decision makers and stakeholders by providing easily understandable summary sheets.

Originality. The originality of the paper lies in combining, in a single model, the VSA, interpretative lens of reality, with an innovative methodology following a big data-oriented approach. In particular, the work has utilized knowledge from three different domains, i.e. urban management, computing science and statistics, which have been synergistically integrated for customizing, implementing, and using IT tools capable of automatically identifying, selecting, categorizing and analyzing the collective perception of a city and its urban assets through people's reviews.

Keywords: Urban governance; decision-making; Viable Systems Approach (VSA); Aspect Based Sentiment Analysis

EA-28

The Systemic Methodology for Knowledge Creation and Management: Its Conception and Use.

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EXTENDED ABSTRACT

This paper has the aim to show the Systemic Methodology for Knowledge Creation and Management (SMKCM) as a mean for the management of collective knowledge in organizations.

The SMKCM was created at Instituto Andino de Sistemas (IAS), from Lima, Peru; and has nine (9) stages. It is based on the combination of Soft Systems Methodology (SSM) and its Wilson´s variant, as well as on Nonaka and Takeuchi´s Spiral Model for obtaining collective explicit knowledge and its management.

It considers, as well, issues concerned with knowledge categories, issue based and primary task model, project management, organization´s structure, enterprise architecture, knowledge´s geo-reference mapping and the organizational learning paradigm as a need for landing of any knowledge management approach, among other considerations, including the concept of hypertext organization, proposed by Nonaka and Takeuchi, but modified and enriched with more layers: instead of the three layers proposed by Nonaka and Takeuchi, in the SMKCM, seven layers are proposed.

The guarantee of SMKCM to deal with collective knowledge within organizations, in a pertinent manner, is because it is based on a soft systemic view of organizations. This allows to have a multi-stakeholder view of processes and also the modelling of organizations is based on diverse stakeholders´ interests, power and worldviews (welstanschauungen), allowing to do a pertinent management of collective knowledge from diverse stakeholders intervening in the organization´s life.

SMKCM has nine stages, which are:

Stage 1: Unstructured Situation

Stage 2: Structured Situation

Stage 3: The Issue Based and the Primary Task Model

Stage 4: Mapping the universe of knowledge categories in an organization

Stage 5: The Input / Output Matrix of Knowledge Categories in an organization

Stage 6: The Spiral Model for creating explicit knowledge in organizations

Stage 7: The Enterprise Architecture to manage the organization´s collective knowledge

Stage 8: Putting the Hypertext Organization in Action (interacting seven layers)

Stage 9: Collective Organizational Learning using the Hypertext Organization

These stages have been composed borrowing and adapting some stages from the Soft Systems Methodology (SSM) and it´s Wilson´s variant, in order to consider the possibility to obtain consensus in the model building, among the stakeholders intervening in the organization´s problematic situation.

Apart from the SSM and Takeuchi´s and Nonaka´s contributions, SMKCM considers additional methodologies, as the Business Process Management (BPM) Methodology oriented to process modelling and automation, the possibility to use geo-reference technology, in order to have a geographical reference of the knowledge managed by the organization.

After describing in more detail the contents of each stage, the paper shows some examples from some stages´ applications, explaining the paths for getting integration of the diverse approaches it uses in each stage of the methodology.

The SMKCM considers seven layers, instead of three considered by Nonaka and Takeuchi, in which they call as the Hypertext Organization, these are:

Layer 1:Knowledge categories

Layer 2:The organizations process´s view

Layer 3:The organization formal structure

Layer 4:The knowledge´s project management

Layer 5:The knowledge´s geo-reference

Layer 6:The technological architecture

Layer 7:The organizational learning

The paper ends giving directives on how to manage the seven layer´s hypertext organization and with some reflections and conclusions on the methodology proposed, and giving directions on further research to be done, concerning the issues it considers.

Keywords: SSM, SMKCM, Knowledge Management, Systemic, Spiral Model, Hypertext Organization

EA-29

Personalized learning with Microsoft products.

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EXTENDED ABSTRACT

My abstract will explains how I apply Microsoft products for personalized learning in my classes. My students learn in different ways and each of them have personal achievements and develop competences that are projected for him/her. Although I teach a foreign language and citizenship, I use Microsoft products for personalized learning, such as: Skype, Sway, FlipGrid, Wakelet, Minecraft. In addition, I have already introduced STEM content in my teaching practice, so that I can relate the items that I teach to real life situations. My goal is to get my students to solve the problems by using research work, critical thinking, their strengths, peer collaboration etc.

Beside the effort to perfect my existing teaching approach, I tend to enrich it by introducing innovative and creative solutions adapted to the students' progress, age and interest. One of these innovative approaches in teaching foreign languages is the use of the platform "Skype in the classroom" in which I have been involved for five years.

My students benefit from the Skype meetings in the best way. They have the opportunity to practice their communication skills and break speaking barriers in Italian or English, as well as enrich their vocabulary with spoken language expressions. This experience also give them the opportunity to make friends with their peers, which has broaden their vision of cultures and lifestyles other than their own.

But not all students show the same interest in this kind of teaching. Some are too shy, some concerned about not expressing themselves incorrectly and that they wonŷt be understood by the peers on the other side of the screen, some are still bored because they were not "language" types.

It is necessary to find a way for them to participate equally in the work, so I always look for a solution in the framework of other Microsoft products that are available to us in the digital classroom.

I find a solution by adding new activities for certain students. I prepare a list of actions so that all the students, even those with learning difficulties, can participate.

Students who are not comfortable enough to participate orally in the activity can photograph or film the class and make presentations in Sway by introducing directly that material with the text composed in Word. Students begin a path

starting from the first class to learn how to use simple programs such as Wakelet and Sway. In that way they strengthen their digital competence through a targeted use of multimedia tools to find and process information, and collaborate with new partners.

It is very important that the voice of the students be heard, and that they realize how they sound in a foreign language, how they look, where they make communication mistakes etc. For this it serves to record videos in Flipgrid. Some students with auditory problem and other disabilities work in Minecraft and create their own world awakening their imagination.

The next time, they can change their roles and become presenters, ask questions to the speakers, as they slowly regain self-esteem. It is essential to strengthen their motivation and to give them the needed support to achieve the expected results. The students work in heterogeneous groups participating constructively and helping each other.

Keywords: Education, Learning, Microsoft, Minecraft, Skype, Sway

EA-30

Combination of systemic methodologies and Business Intelligence in management of public education organization

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EXTENDED ABSTRACT

This paper investigates adoption of Business Intelligence in the public sector and more specific in managing of education organizations in order to identify issues and challenges.

In today's world, information has unlimited power. It affects daily life, decisions, as well as the success or failure of an organization. The desire to capture and understand the insight of information encourages people to create technology capable of collecting and analyzing information with the most efficient method. Business Intelligence (BI) is a technology suitable for this purpose and it has been growing rapidly. Even though BI implementation is well known among the private sector, its significant use in the public sector is undeniable.

Business intelligence is the set of mathematical models and analysis methodologies that systematically exploit the available data to retrieve information. It is also consist of a set of processes, practices and people that are used to implement useful information to support decision making in the organization.

The primary and secondary education organizations operates an information system to enable procedures related to employees, educators, pupils and other stakeholders. Business Intelligence is known to the art of decision making with a view to increasing both effectiveness and efficiency. At this point, Business Intelligence seems to be a supporting technology. In addition the research interest nowadays is shifted to improve analytical capabilities of BI in decision making

Government agencies are measured not by profits and losses, but by their ability to deliver their missions. Taking into account the current structure of education organizations and review of Business Intelligence, the study derives a systemic methodology for identification of factors that enables the measurement of the performance and efficiency allowing in parallel targeted actions for improvements.

The main method and tools are used for this methodology are systemic. Especially we used the DCSYM systemic methodology, in order to depict the situation and identify the keys for better understanding and provide efficient and viable solutions.

Keywords: Public Education, Business Intelligence, Systemic Methlollogies

EA-31

Employer Branding: An Alternative Systemic Approach to Talent Management and Acquisition.

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EXTENDED ABSTRACT

Nowadays, there is an increasing pressure for organizations to attract the best employees among the available choices of a talent pool who could definitely contribute positively on their separate operational and management procedures. Potential high-skilled employees are included on the first strategic priorities of modern organizations as almost the whole business sector has already begun to feel the change management requirements the current digital transformation imposes. To this direction, a company needs to maintain and improve all the necessary channels it uses in order to fulfill its hiring goals or even building new channels for more efficient, flexible and attractive processes. Employer Branding is a relatively new concept which couples brand and human resource management functions enhancing that way the possible creation of new 'contact' channels. For a long time, marketing and HR have been perceived as two different spheres where none of the sides should intervene into one another's business. By emerging efficiently some of the knowledge and operations parts of these two different company departments we could result in the even better talent attraction and employees' acquisition.

On this study, we focus on a multinational, retail trade, Textile Company with Headquarters in Great Britain and commercial units in Greece among many other countries. This organization is currently in the need of being transformed with respect to its employment needs. On this way, employer branding was chosen as the most effective approach for its achievements. In our pursuit, it is shown how crucial interventions in the engaged system and subsystems would contribute to the complete and efficient adoption of employer branding concept.

On the first part of this study, it is introduced the DCSYM (Design and Control Systemic Methodology) and with its further implementation to the organization's system. The main subsystems which will be taken into consideration are recognized as well as their current communication and control channels. Focusing on the desired transformation results, we make necessary structural and communication interventions in the framework of our suggested improvement towards organization's goal.

On the second part of our study, we use established systemic tools for the modeling and simulation of the core HR department procedures and their extension to the new required procedures which support the suggested concept of transformation. Vensim PLE takes place for the detailed simulation modeling of the system – on –focus providing us qualitative and quantitative information about it. VSMod tool will complementarily be used for the depiction and approach of the engaged system and its subsystems as a viable system.

Keywords: human resources, business process, transformation, DCSYM

EA-32

Formative Evaluation for Intelligent Quality Management in an Education Program.

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EXTENDED ABSTRACT

Formative assessment is a continuing cyclic process which informs ongoing teaching and helps learners' active engagement in learning. Evaluation is a process that compare the results with the goal, an initial situation with the final one. "Evaluate" means making an assessment based on some measure or information and referring to some criteria. Evaluation processes are touted to be productive mechanisms for the improvement of educational systems and products. And there is hard evidence of the utility of evaluation in actually improving technology based products and efforts in instructional development. Evaluation is known as well as to contain a strong negative potential. Evaluation can identify weaknesses in such a way as to inhibit exploratory behavior and risk taking on the part of researchers and developers. In this paper a number of scientific issues regarding this very challenging problem of formative evaluation are considered and analyzed. In particular the roles of Intelligence, Artificial Intelligence (AI) and Business Intelligence (BI) in Formative Evaluation for Quality Management in an Education System is carefully studied.

There is plenty of literature reviews on the purposes and functionality of evaluation but the research on the instructor's beliefs and particularly on trainee's beliefs is limited, (Struyven, Dochy & Janssens, 2005). However, the study of trainee's perceptions about the evaluation has particular importance because they have significant impact on the quality of a learning program, (Ramsden, 1997).

In this case study a research was carried out using the technic of Formative Evaluation in order to evaluate two thematic areas with the cooperation of the program's leaders. The aim of the study was to extract conclusions and opinions about the program's value, the achievement goals and the organization implementation requirements and how all this results will been feed backed to program managers and policy makers with the appropriate information which are necessary to adopt appropriate corrective interventions for programs quality improvement. Till today AI and BI was used very limited on these studies. In this case study an effort is made to explore their potential usefulness. Therefore future research on Formative Evaluation for Intelligent Quality Management in Educational Programs is a must.

The Formative evaluation is a process used by trainers and trainees in teaching that provides feedback on updating current teaching and learning methods in order to improve trainer's achievement in relation of teaching goals. This type of evaluation is carried out throughout the life of the training program and intend on making decisions that draw on the conclusions reached in the course of the program. Results of the formative evaluation give ground for both outputs of a design research study: improving the prototype of the intervention

EA-33

A Business Intelligent Connection between Quality and Evaluation methods.

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EXTENDED ABSTRACT

Nowadays, information and knowledge represent the fundamental wealth of an organization. Enterprises try to utilize this wealth to gain competitive advantage when making important decisions. An important decision is to accept a project after its completion. Usually, after a project finishes, an evaluation is performed in order to define the project's quality level. But, what is "quality"? There are many and different definitions of quality and all depend on the type of project. For our study quality is simply what are a person needs and expectations from the project's results. Quality is also closely related with person's satisfaction. Even if the project's deliverable meets all aspects of what a person needs, if the total project's process is not satisfactory, there is a total quality problem. The Quality Management Plan defines the project's overall quality program objectives, as well as specific plans for quality assurance, quality control, and quality support. Here, the Business Intelligence (BI) theories come and help the individual to accept or reject the proposed Quality Management Plan in order to target project's results. There are many different methods of evaluation, but do have all of them the same reliability?

In this paper we try to check the quality of a project using the method of questionnaires. But which type of questionnaires? Nowadays, there are two categories of questionnaire's administration. The traditional paper questionnaires and the online questionnaires. Although the two acquisition processes have the same scope, there are completely different, having each one its advantages and disadvantages, which affects the results. Again Business Intelligence play a role in this process.

In this paper we will intelligently try to investigate how the questionnaire methods can define a project's quality and which type of questionnaire administration gives more reliable results. Moreover, we tried to investigate the quality of the educational process. In order to compare survey methods, the responses of University students were taken. In this study, we tried to investigate the reliability, honesty, item mean, response rate, completeness of data, and also made factor analysis comparisons dependent on the survey media. The aforementioned experiment was executed using the same audience and content, between two different methods. The results of the data analyses among paper and online questionnaires, shows that the administration method have a significant effect on overall results. The majority of differences found on questions related with personal criticism (sections where the respondent's anonymity plays a significant role), and on response rates. Specific examples will be given at the conference.

As a result, the quality check of a project using questionnaires, needs attentive design, trying to avoid points that introduce uncertainties and are able to spoil the real opinion of the respondents.

EA-34

Facebook and Instagram Marketing & Tourism

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EXTENDED ABSTRACT

It is certain that Tourism is one of the sectors most affected by the development of Digital Technology. Thus, Tourism, Transport and Catering companies are considered to be pioneers in the use of Digital Marketing and Social Media techniques, as well as Online and Smart Advertising.

How Facebook and Instagram have Changed Tourism Marketing

1. Travel research

The most known effect of Social Media on the tourism industry today is the rise of online reviews. Travelers usually research online to find their future travel destinations and accommodations. When booking their travel, approximately 89% of millennials plan their travel activities based on content posted online by other users.

Most people are browsing the Internet for travel tips. Social/artistic sharing platforms such as Instagram or crowd-sourced reviewing platforms such as TripAdvisor, offer them access to other travelers' photos, check-ins, ratings and so on. This information isn't only easily obtained; it is also real feedback from a person with similar travel options.

2. Rise in Travel Content and Social Sharing

Travelers have always loved to share their traveling experiences. The Digital Age and Social Media expand people's ability to share travel these experiences with a wider audience than the once close friends circle. Approximately over 97% of millennials share content such as photos and videos of their travels online, building a peer-to-peer influential network with content that serves to inspire or discourage potential travelers.

Of course many companies try to take advantage of these rising trend. Online contests, influencer marketing are on the rise, especially on Instagram due to its more Artistic nature.

Digital technologies allow mention and hashtag tracking across Social Media platforms. It is easier than ever for companies to discover potential clients and to approach them accordingly. Therefore integrating Social Media advertising cutting edge Technology can be combined with encouraging Brand Promotion across Social Media channels.

When satisfied clients share their wonderful experience on Social Media, other potential clients see the desirable traveling experiences and are more incentivized to participate.

3. Customer service

Customer Service and especially need for Customer Satisfaction have also gone through vast changes in the digital era. The easy peer-to-peer availability of information has led most of today's Brands to seek a Social Media presence, used, not only to maintain a positive online image or increase awareness, but also to

provide improved Customer Service. Positive feedback and a good online image are essential for a company operating in the Tourism Industry.

Social Media often serve as an intermediate between customers and entrepreneurs. Social Platforms such as Facebook and Instagram can be a self-improvement tool as well as a marketing tool. Listening to customers voices through Social Media critiques, feedback etc, can help Brands create a useful experience and, at the same time, the most powerful marketing of all: positive feedback.

Furthermore, a recommendation or a review on Social Media is much more powerful than any other advertisement, as it represents the "Word of Mouth Marketing".

4. Booking

Social Media and the Digital Age reshaped the whole traveling industry model. The ease of self-service booking in major sectors of the tourism industry such as Tourist accommodation, Transport and Catering, is forcing most businesses to shift towards a more "digital" nature. While the old-fashioned booking is not yet obsolete, many hotels and traveling agencies have shifted their target from in-person to digital experiences, as they are adapting to new Digital Market trends.

More powerful than Google?

Social Media are really effective in the tourism industry, mainly because people tend to buy from brands they trust. And people trust Social Media Brands such as Facebook and Instagram, as they are mainly connected with people's leisure time.

While a Google search is extremely useful for research purposes, the customer is absolutely aware of the purpose of his online journey and will try to find the best choice among many many Google Advertisements. On the other hand, a Customized Advertisement displayed to the user when browsing on Social Media can sometimes be much more powerful than a Google Advertisement because it simply "catches the Customer off Guard" or may trigger a spontaneous reaction.

Conclusion: Social Media have changed the very nature of marketing, especially in the Tourism industry. Most travelers determine their traveling plans based on businesses' online presence, reviews and Social Media shares. Online customer service is playing a crucial part of building a positive Brand reputation. The rising importance of Social Media has disrupted traditional tourism marketing models for hotels, restaurants and travel agencies etc. Furthermore, with the use of tailor made advertising on Social Media, above companies can approach a wide audience eager to discover all their businesses have to offer.

Keywords: digital marketing, facebook, instagram, tourism, social media

EA-35

Using value maps as a basis for business intelligence projects

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EXTENDED ABSTRACT

Business intelligence (BI) is a set of techniques, methodologies, and related information systems technologies that transform business raw data into meaningful and useful corporate knowledge, thus enabling more effective decision-making at strategic, tactical, or operational levels. In terms of implementation, BI systems are information systems that help users analyze and use data.

BI is, by definition, an interdisciplinary field since it integrates knowledge from different disciplines like data gathering, storage and mining, knowledge management, and data visualization into a coordinated and coherent whole.

BI aims at helping organizations to make more data-driven decisions to drive change, eliminate inefficiencies, and quickly adapt to market or supply changes.

The ultimate goal of every organization is to be viable through, not only maintaining but also improving its capacity to produce value. Thus, the feasibility study and the prospect of a BI project should be seen from the perspective of how it helps the organization to create value and to remain viable. For this reason, before decisions concerning data selection, data warehouse architecture, data mining, or data visualization, it must have been clear how value is created within the organization. Moreover, this perception of value creation must be a common understanding among the different stakeholders who may be involved in the BI project.

There are several ways to describe how value is produced in an organization, starting from the very basic one, which is a wordy, extensive text. Apart from that, modeling and visualizing value creation can greatly facilitate stakeholder conversations, thereby reaching an agreement and making decisions.

The purpose of this contribution is to present the concept of value maps in information systems development and to explore how they can be used as the basis for a BI project.

A value map consists of (a) a graphical background containing business value related concepts, (b) functions of a BI information system related to or placed at a relevant business value element. The background of the "map" may be a business model representation (i.e., business model canvas) or a depiction of the organization functions showing how the inputs to the overall process end up as

outputs giving a specific value to the customer. Information placed on the map may include BI functions, modules, or specific BI artifacts like reports, charts, or performance indicators.

The interdisciplinary nature of BI and the multitude of stakeholders necessitate systemic representation and the use of systemic methodologies to create order out of the different perspectives and a shared vision about the purpose of the project.

The Design and Control Systemic Methodology (DCSYM) provides a means of creating the value map, incorporating the features and artifacts of the BI system. Its system-subsystem approach enforces the systemic approach, and the graphical notation is easily understandable by all business stakeholders.

Keywords: BUSINESS INTELLIGENCE, SOFTWARE MAPS, SYSTEMS, DCSYM