



**Hellenic Society
for Systemic Studies
(HSSS)**

Full member of IFSR

11th HSSS

NATIONAL & INTERNATIONAL CONFERENCE 2015

SYSTEMICS & HEALTH CARE

10 - 12 JULY 2015, ATHENS, GREECE
ROYAL OLYMPIC HOTEL

www.2015.hsss.eu

PROGRAM & ABSTRACTS

In collaboration with
and under the auspices of the:



Dept. of Informatics
University of Piraeus

Under the auspices of the:

Dept. of Medicine
University of Ioannina





www.2015.hsss.eu

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Welcome Message

On behalf of the Hellenic Society for Systemic Studies (HSSS) we would like to invite you to the 2015 HSSS 11th. National & International Conference, organized in collaboration with and under the auspices of the Department of Informatics of the University of Piraeus and under the auspices of Department of medicine of the University of Ioannina, which will take place in Athens, Greece.

The HSSS's annual National and International Conference is held alternately in different cities of Greece in collaboration with and/or under the auspices a local University or Department of a local University 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 Health Care" 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 Health Care.

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, 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.

Athens is the capital of Greece. Its economy is also supported by manufacturing, trade, services and tourism.

Athens 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.

Chair of the Organizing Committee

Dr. Stergianni Giannakou
National Organization of Medicine,
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Athens, Greece

Chair of the Scientific Committee

As. Professor Vasileios Ragos
Dept. of Medicine,
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Acknowledgements

*The Board of Directors of the
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&
the Organizing Committee of the
11th National & International Conference
would like to thank
all those who have contributed to
ensure the conference come to success;
reviewers, presenters, authors, sponsors,
support team and other conference assistants.*

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Brief Program

Friday 10th. July, 2015

- 09:00 – 18:00 Registrations Open
- 09:15 – 10:30 Virtual Session
- 10:30 – 12:30 Opening Ceremony with Keynote Addresses
- 12:30 – 14:00 Welcome Reception
- 14:00 – 15:30 Keynote Addresses
- 15:30 – 16:00 Coffee Break
- 16:00 – 17:30 Workshop & Parallel Sessions
- 17:30 – 18:00 Coffee Break
- 18:00 – 19:30 Professional Panel & Parallel Sessions

Saturday 11th. July, 2015

- 09:00 – 15:00 Registrations Open
- 09:30 – 10:30 Virtual Session & Parallel Sessions
- 10:30 – 12:00 Workshop & Parallel Sessions
- 12:00 – 12:30 Coffee Break
- 12:30 – 14:00 Keynote Addresses
- 14:00 – 15:00 Light Lunch
- 15:00 – 16:30 Workshops & Parallel Sessions
- 16:30 – 17:00 Coffee Break
- 17:00 – 18:30 Professional Round Table
- 20:30 – 02:30 Gala Conference Dinner with dance

Sunday 12th. July, 2015

- 10:00 – 13:00 Registrations Open
- 10:30 – 12:00 Workshop Sessions
- 12:00 – 12:30 Coffee Break
- 12:30 – 14:00 Workshop Sessions
- 14:00 – 14:30 Closing of the Conference







Program Timetable

Friday 10th. July, 2015



09:30 – 18:00	Registrations Open
10:30 – 12:30	Opening Ceremony
	Hall: ATTICA
	Opening Ceremony with Keynote Addresses
	Chair: Dr. Stergianna Giannakou & Dimitrios Varsos
	Opening by the representative of the Athen's Bishop
	Salutation by the President of the HSSS, Professor N. Assimakopoulos
	Salutation by the Chair of the Scientific Committee, As. Professor Vasileios Ragos
	Salutation by the rep. of the Dept. of Informatics, Un. Piraeus
	Salutation by the rep. of the Dept. of Medicine, Un. Ioannina
	CSAP Certification Projects: Distinction
	Best Student Paper Award
KN-01	Systemic Intervention for Public Health Gerald Midgley
KN-02	The Systems view on health care – care is more than economy Felix Tretter
KN-03	The Anthropocentric Systemic Approach for Doctors, Pharmacists and Health Care Professionals Ioannis Kalogerakis
12:30 – 14:00	Welcome Reception, Roof Garden Restaurant, 6th floor
14:00 – 15:30	Keynote Addresses
14:00 – 15:30	Hall: ATTICA
	PP-01 Health Care Consulting I
PP-101	Use of Systemic Methodologies in the Organization and the Legal Fortification for health Units Konstantopoulou Mary
PP-102	A systems approach to integrating outsourced services into a health unit's operational processes Varsos D., Konstantopoulou Mary, N. Assimakopoulos
PP-103	Protection and the promotion of the moral, financial and business interests of SEIV members Leivadas G.
KN-04	Corporate Governance and Compliance in Health Care Thanopoulos J.
14:00 – 15:30	Hall: Conference 1 (floor 1)
	EA-01 Business Process Modeling I
	Chair: Ioannidis Ch.
EA-01.01	DCSYM Methodology and SWOT Analysis as Tools of Process Recording at DAEM S.A. Company: An Attempt to improve existing Company Processes using Systemic Methodologies Stathatos N.
EA-01.02	A systemic model for analysis of marine incidents

	Mouratidis P.
EA-01.03	Systemic approach with the use of Viable Systemic Model: The case of EGovernment in Mediterranean countries eG4M
	Mahmudi N.
EA-01.04	Balanced Adaptability in Manufacturing SMEs
	Ioannidis Ch.
15:30 – 16:00	Coffee Break at ATTICA HALL, ground floor
16:00 – 17:30	Workshop 01 & Parallel Sessions
16:00 – 17:30	Hall: ATTICA
 WS-01	Workshop 01
	Clinical Trial Studies and Health Care
	Roussos I., ANTAEA Group of Companies
16:00 – 17:30	Hall: Conference 1 (floor 1)
 WS-02	Workshop 02
	Advanced Technological and Computational Platforms for powerful STEM Education
	Theocharopoulos I.
16:00 – 17:30	Hall: Conference 2 (floor 2)
 EA-02	Business Process Modeling II
	Chair: Papaioannou P.
EA-02.01	A Systemic approach to Requirements Engineering using DCSYM and Ontologies
	Antoniadis A., Assimakopoulos N., Papaioannou P.
EA-02.02	Business Process Reengineering of an Accounting Office using Systemic Methodologies
	Petsoukis L.
EA-02.03	Managing diversity and modeling of effects of several factors on the activities of a System: A Systemic approach to optimize procedures in one of the Services of General Interest in the water market
	Drakos I.
EA-02.04	Regional Tourism Development through Renewable Energy: A systemic governance approach
	Parpairis D., Lagos D.
16:00 – 17:30	Hall: Conference 3 (floor 3)
 EA-03	Innovation in Education
	Chair: Pange J.
EA-03.01	Games and MOOCs in Medical Education
	Pange J.
EA-03.02	Using Interactive Video For Health Education
	Pange J, Tsoni R., Lekka A., Sypsas A.
EA-03.03	Organization and structure of certification program «2nd-Level» for educators of Greek Ministry of Education and Religious Affairs with the application of DCSYM methodology
	Patsi D., Alexiou I., Fasoulas S.
17:30 – 18:00	Coffee Break at ATTICA HALL, ground floor

18:00 – 19:30		Professional Panel & Parallel Sessions
18:00 – 19:30		Hall: ATTICA
	PP-02	Project Management in Health Care: Driving Results and Increasing Competitive Advantage
		Chair: Giotis T.
18:00 – 19:30		Hall: Conference 1 (floor 1)
	WS-03	Workshop 03
		Application of the system of Neuro Linguistic Programming in advancing health professionals' communication skills
		Euthimiadou A.
18:00 – 19:30		Hall: Conference 2 (floor 2)
	EA-04	Operations in Public Sector
		Chair: Antoniadis A.
	EA-04.01	Applied Process Mining in a Blood Bank and correlation with the Systemic Approach
		Papaioannou P., Assimakopoulos N., Antoniadis A.
	EA-04.02	The use of DCSYM and System Dynamics Systemic Methodologies in a Unit of the Hellenic Army
		Lagoudaki D.
	EA-04.03	E- Commerce as a source of advanced managerial performance in the new business area
		Karampatos G.
	EA-04.03	The use of DCSYM Systemic methodology for the re-organization of a project management and investment organization
		Tziotis M.
18:00 – 19:30		Hall: Conference 3 (floor 3)
	EA-05	Organizational Development & Performance Management
		Chair: Sakellariou D.
	EA-05.01	Systemic Approaches to Strategic Planning for Optimization of the Organizational Structure and for Goals' Achievement of BASF Hellas SA.
		Sakellariou D.
	EA-05.02	Systemic Approaches of the Strategic Design implemented in the set up and positioning of the X Ltd Import Company in the Greek market.
		Papassotiriou A.
	EA-05.03	The use of VIPROCE Systemic Multi-Methodology to a Multinational Industry: A real e-Governance model
		Miaris A., Assimakopoulos N., Riggas A.
	EA-05.04	Systemic methodologies and defined benefit pension schemes
		Papadopoulos G.

Saturday 11th. July, 2015

09:00 – 15:00		Registrations Open
09:00 – 10:15		Virtual Keynote Addresses & Parallel Sessions
09:00 – 10:15		Hall: Conference 1 (floor 1)
	VKN-01	Virtual Keynote Addresses
		Chair: Stathatos N.
	<u>VKN-01.01</u>	An Organizational Cybernetics and ICT based approach to collective discussion of complex issues
		Rios J. P.
	<u>VKN-01.02</u>	The Need for a Purposeful Healthcare System
		Metcalf G.
10:30 – 12:00		Workshop & Parallel Sessions
10:30 – 12:00		Hall: ATTICA
	WS-04	Workshop 04
		Health care Quality and Safety Management Systems
		Katsapi A., Lazarou P., Kalofyssoudis I., Gallou I.
10:30 – 12:00		Hall: Conference 1 (floor 1)
	EA-06	Health Care Management
		Chair: Giannakou S.
	<u>EA-06.01</u>	A Systems approach to understanding the dynamics of bullying: A student's perspective.
		Assimakopoulos N., Giannakou S., Giannakaki M.
	<u>EA-06.02</u>	A Systemic Approach to Healthcare Management of Immigrants in Eastern Macedonia and Thrace
		Theodosiou T., Polychronidou P., Karasavoglou A.
	<u>EA-06.03</u>	A systems approach to controlling Supply Chain of Pharmaceutical Products: A journey to the last mile
		Karadimos L.
	<u>EA-06.04</u>	Abstract of Best-Buddies program of the University of Ioannina
		Salevri E.
12:00 – 12:30		Coffee Break at ATTICA HALL, ground floor
12:30 – 14:00		Keynote Addresses
	KN	Hall: ATTICA
		Chair: Varsos D.
	<u>KN-05</u>	Systems & Complexity Science – New Paradigms & Tools for Healthcare Management
		Maani K.
	<u>KN-06</u>	SeniorTV; An AAL caregiving systemic solution for older adults that live alone in their own homes
		Laouris Y.
	<u>KN-07</u>	An Overview of M-Health Medical Video Communication Systems
		Pattichis C.


12:30 – 14:00		Hall: Conference 1 (floor 1)
	EA-07	<i>Creativity & Innovation</i>
		<i>Chair: Stathatos N.</i>
	EA-07.01	E-Services Development in the Collaborative World
		<i>Bithas G., Konstadinos K.</i>
	EA-07.02	The use of Systemic methodologies in the Operation of a Army Headquarters: VSM of Beer, DCSYM, Vensim, Anylogic
		<i>Gkontevas G.</i>
	EA-07.03	Restructuring a contemporary retail sales system using DCSYM Systemic Methodology
		<i>Koukourakis A.</i>
	EA-07.04	Restructuring small-medium enterprises with an emphasis on communications between departments with the use of DCSYM Systemic Methodology
		<i>Ziampara E.</i>
14:00 – 15:00		Light Lunch, Roof Garden Restaurant, 6th floor
15:00 – 16:30		Workshop & Parallel Sessions
15:00 – 16:30		Hall: ATTICA
	WS-05	Workshop 05
		Microexpressions and Solutions for HR at Pharmaceutical Companies
		<i>Chair: Velkos V., Fragias N., Doukas P., Kariera.gr</i>
15:00 – 16:30		Hall: Conference 1 (floor 1)
	PP-03	<i>Health Care Consulting II: Doctors' experience</i>
		<i>Chair: Konstantopoulou Mary</i>
	PP-03.01	Health Care in Maxillofacial Surgery
		<i>Ragos V.</i>
	PP-03.02	Thinking of orthopedic patient and improving Health Care Services
		<i>Zachariou St.</i>
	PP-03.03	Body modification and Health Care
		<i>Damagas A.</i>
15:00 – 16:30		Hall: Conference 2 (floor 2)
	EA-08	<i>Strategic Management & Development</i>
		<i>Chair: Katsanakis I.</i>
	EA-08.01	Does COBIT 5 constitute a new Business Excellence Model?
		<i>Katsanakis I., Vorria E., Skotis A.</i>
	EA-08.02	Use of Systemic Methodologies for creating and deploying an innovative pilot project: Voluntary Citizenry Action (VCA)
		<i>Vlassis P., Tzamou D., Bitsi M.</i>
	EA-08.03	Use of Systemic Methodologies for the Research & Development of innovative technology in Implementation of electric fields in water
		<i>Vlassis P., Bitsi M.</i>
	EA-08.04	Island Health System facing the insularity
		<i>Chatzopoulos P.</i>
15:00 – 16:30		Hall: Conference 3 (floor 3)
	EA-09	<i>Sociocultural Impact</i>
		<i>Chair: Makrynika A.</i>
	EA-09.01	Orange economy as a systems approach study

	Makrynika A.
EA-09.02	The use of DCSYM Systemic Methodology for the re-organization of a Hospital's Department
	Psallas K.
EA-09.03	The use of DCSYM Systemic Methodology in the AndGate Technologies Company
	Tsilimigra O.
EA-09.04	The use of DCSYM Systemic Methodology for the organization of the SEIKO ophthalmic lenses branch in Greece
	Spelas A.
16:30 – 17:00	Coffee Break at ATTICA HALL, ground floor
17:00 – 18:30	Professional Round Table
	Hall: ATTICA
PRT	Healing the Healthcare Organization: A Systems Approach
	Chair: Varsos D.
	Contributors
	Gerald Midgley
	Felix Tretter
	Maani Kambiz
	Laouris Yiannis
	Pattichis Constantinos
	Thanopoulos John
20:30 – 02:30	Gala Conference Dinner with dance

Sunday 12th. July, 2015

10:30 – 12:00	Workshop & Parallel Sessions
10:30 – 12:00	Hall: ATTICA
	WS-06 <i>Creating Contemporary Health Tourism Destinations</i>
	Chair: Constantinides C.
WS-061	The "...health in Greece"
	Constantinides C.
WS-062	Ensuring Success, Sustainability and Resilience – The role and value of Alliances
	Acavalos A.
WS-063	Health Tourism Education
	TBC – Hofman S.
WS-064	Management Education - Investment
	TBC – Angelopoulos C.
WS-063	Invest & Trade Greece
	TBC – Economides P.
10:30 – 12:00	Hall: Conference 1 (floor 1)
	EA-10 <i>Maxillofacial surgery and successful implants: a health care approach</i>
	Chair: Ragos V.
EA-10.01	Cytotoxic Action of Vanadium Complexes against Cancer and Normal Fibroblast Cell Lines



	<i>Ragos V., Dhima I., Kontargiris E., Karkabounas S.</i>
EA-10.02	Metal related Anti-Hypertensive Factors and Metals may modify Plasma Lipid levels in rats
	<i>Lekkas P., Kontargiris E., Ragos V., Evangelou A., Kalfakakou V.</i>
12:30 – 13:00	Coffee Break at ATTICA HALL, ground floor
13:00 – 13:30	Closing of the Conference
	Hall: ATTICA



Scientific Events



KN-01

Systemic Intervention for Public Health

Rerald Midgley

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EXTENDED ABSTRACT

In this presentation I will outline a methodology for systemic intervention, which emphasizes the exploration of stakeholder values and boundaries for analysis; helps identify and address processes of stigmatization and marginalization that can inhibit both stakeholder participation and systemic thinking; and supports the mixing of methods from diverse sources (including other systems approaches as well as the biophysical and social sciences). This methodology will be illustrated with examples of practice from the field of public health.

Keywords: Systemics, Health Care

KN-02

The Systems view on health care - care is more than economy (Without economy everything is nothing, but economy is not everything!)

Dr. Dr. Dr. Felix Tretter

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EXTENDED ABSTRACT

At present, analysis and design of health care (HC) systems is dominated by views of health economics. This results in the problem that already on a micro-level a health care (HC) unit is reduced to monetary variables and parameters: Monetary input is supposed to generate health output. This is not totally wrong but insufficient, as also psychosocial input (e.g. empathy of the staff and atmosphere of the setting) are important properties that help patients and lead to higher adherence but that cannot be measured validly within time-space and intensity coordinates. They also resist precise monetarization (even not in the framework of QM). Therefore they are not control variables in HC management. Additionally, as even medicine cannot define "health" economics cannot do it either. Further on, health statistics show that percentage of GNP spent for health expenditures shows only a low correlation with global health parameters.

These methodological and analytical aspects show that "health" economics scientifically is a questionable project as some economists aim a unidimensional reductive modelling of HC and its units. It must be mentioned here that economics on general lacks philosophical reflection (e.g. P. of science, philos. anthropology, ethics) and ecological perspectives (social epidemiology, supply epidemiology, social geography etc.). In line with this, if the HC macro system is designed and organized in the frame of profit-oriented market economics soon the primary goal of providing health is undermined: staff is mainly working for good money and not for one of the highest cultural goals, namely to help sick persons and also insurances do so. We already have a staff shortage in most European countries. This implicates that if health is a high human value and common goal the state, politics and health administration must keep control of the HC system and there must be under empowered democratic supervision. It must be reminded here that already in Ancient Greece Hippocrates constituted the priority of ethical reasons to heal before monetary motives.

Economists very often also show a quite static view that neglects interactions. Therefore, let's make a brief thought simulation regarding the dynamic systemic structure of the core system of HC consisting of doctors, patients and insurances and assuming that the rationally utility maximizing "homo economicus" governs the processes between these three components: patients in the relation to the insurance company pretend to be healthy in order to pay the lowest insurance

premium and the insurance company promises to pay everything but excludes some diseases (e.g. addiction) in the contract that is written in small letters and is overseen by the patient. In contrast to this, the healthy patient presents symptoms to the doctor in order to obtain a sick note. The doctor in turn responds with extensive diagnostics and treatments. Additionally, he charges services from the insurance company that he did not provide. In turn, the insurance does not accept medical services that are not covered by the contract and assumes a financial fraud.

Although punctually such processes take place, in reality the system is mainly not operating in this way but it is based on "trust" and "fairness", categories that are not central in the conceptual repertoire of economics. In consequence, this dynamic three-component model cannot be fully understood without a sophisticated methodology using also psychological, sociological and systemic views. In other words: From the view point of systems science of living systems, any qualified modelling of the HC system should consider multi-level perspective that sees the HCS as a complex dynamic system with intrinsic organizational potential (Tretter 2011, Barabasi et al. 2011, WHO 2011). This view will be presented.

Keywords: Systemics, Health Care

KN-03

The Anthropocentric Systemic Approach for Doctors, Pharmacists and Health Care Professionals

Dr. Yiannis Kalogerakis

JMK

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EXTENDED ABSTRACT

The holistic approach to health care requires that the “human element” in considered equally, as many other scientific issues. The Anthropocentric approach requires that all health care professionals shift from health care with epicenter the disease to health care with epicenter the patient. Doctors, nurses, pharmacists and all other health care professionals must become more humane and cater for the human & the psychological element of their profession equally as the medical and scientific one.

The Anthropocentric Approach that emerged equipped with timeless principles and values and a systemic approach to Health Care, surfaced the fundamentals of humane behavior and is currently showing good results of true health recovery in many extreme and typical health care incidents.

Keywords: Systemics, Holistic, Anthropocentric approach

KN-04

Corporate Governance and Compliance in Health Care

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EXTENDED ABSTRACT

In the sixties innovative authors wrote about corporate responsibility and corporate responsiveness. A new business era was starting. The emergence of the global village allowed the intermixing of practices, patents, concepts, philosophies, ethics, and resources. It allowed also business to acquire a leading role in shaping the societal betterment and human future. All of a sudden the ex-slave became a master and the center of attention of corporate might. The transition proved to be easier than expected though its first steps were full of surprises. Max WaysA 1974 article in the Fortune Magazine is typical of the new business era, its title being Business Faces Growing Pressures to Behave Better!

The address will capitalize on the key mechanism of the modern era business progress and its Principles (or Code) of Corporate Governance. For a business the Principles of Corporate Governance are equivalent of state Constitutions. They are the platforms from where operation manuals and organizational details of any type of business originate. They cover a variety of critical matters including ownership, control mechanisms, supervising authorities, philosophy, ethical behaviors, dealing with executives, personnel, customers, environment, legal compliance, crisis management and so on.

The address will also capitalize on the use of the Principles of Corporate Governance by health care-related enterprises. When someone is in pain or on the critical list of survival, she may be willing to sacrifice any monetary amount for her health's improvement. This is a major issue of philosophical and ethical dimensions that pertains to the societal role of health care business, its governance and it has also many political and legal repercussions.

Keywords: Corporate Governance, Health Care

KN-05

Systems & Complexity Science – New Paradigms & Tools for Healthcare Management

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EXTENDED ABSTRACT

Complexity is the catchword of our time. It characterises the world and all human relationships – in business, government, social, natural, scientific and political spheres. Complex global and local problems and challenges such as sustainability, climate change, energy, food and financial crises, poverty and security can no longer be viewed in isolation by single disciplines and solved with reductionist mindsets and linear tools. Systems thinking and complexity science provide a powerful paradigm and “language” for understanding complexity and multi-stakeholder planning and strategic thinking.

Healthcare is a complex system comprised of numerous stakeholders, multiple levels and agencies and interlinked social, economic, and cultural dimensions. In such settings, isolated approaches and silo structures are inadequate to deliver desired outcomes. Managing complexity requires systemic and collaborative multi-stakeholder responses. Systems thinking provides a set of powerful and practical tools for dealing with ever-increasing complexity and conflict in healthcare and enable multiple agencies to work collaboratively towards a common goal and shared vision.

In this presentation I discuss the key drives of complexity in healthcare systems and demonstrate international cases in healthcare management based on principles of Complexity Science and Systems Thinking tools.

Keywords: Complexity, Systemics

KN-06

SeniorTV; An AAL caregiving systemic solution for older adults that live alone in their own homes

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EXTENDED ABSTRACT

The speaker will present a new Ambient Assisted Living project, which has as central objective to develop a platform for providing formal and informal caregiving services and pleasure to older adults that live alone in their own homes. The Ambient Assisted Living Joint Program of the European Commission funds the project. The Cyprus Neuroscience and Technology Institute coordinates a consortium of partners from Spain, Netherlands, Romania and Slovenia.

The aim is to provide services at very low cost. For this project, we start from a basic assumption: that the use of the TV as the central element of the system is appropriate for delivering this kind of services to older adults at their own homes. The focus is on the active prevention and the maintenance of relationships with friends, family, and the community. Also a number of game-like activities will be included.

From a technological point of view, this project aims at developing a platform with services for the care giving of older adults. In order to implement the SeniorTV project, we combine expertise from different areas. On the one hand, we count with end-users: individuals as well as associations and caregivers. They define which interactive services—both formal and informal—that we aim at developing are the most appropriate ones. On the other hand, we count on experts in the areas of: psychology, particularly in geriatric psychology; disease prevention and age-related deterioration (e.g. loss of mobility, cognitive impairment, dementia, Alzheimer, Parkinson); and acquisition of age-related bad habits. This is particularly important for people living alone (e.g. bad hygiene, bad eating habits, social isolation). This background is necessary for a proper definition and design of the services and technological applications that we are going to develop. We also count with the participation of experts in ICT, particularly in multichannel technologies (web, smartphones, tablets, TV) putting a special emphasis on the incipient services for Smart TVs and their related technologies. Additionally, we secured the participation of institutions with experience in the application of ICT to the area of healthcare and caregiving to older adults. Their point of view and experience will be crucial for creating a design (including user interfaces and control devices) that is sufficiently friendly and ergonomic to avoid a possible initial rejection to a solution of this kind. Finally, we count with private and industrial sectors identifying a simple and workable business model that has the capacity to capture a market, develop market strategies, and design of business plans.

Keywords: Systemic solution, elders

KN-07

An Overview of M-Health Medical Video Communication Systems

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EXTENDED ABSTRACT

Significant technological advances over the past decade have led m-health systems and services to a remarkable growth. It is anticipated that such systems and services will soon be established in standard clinical practice. M-health medical video communication systems progression has been primarily driven by associated advances in video coding and wireless networks technologies. Responsive, reliable, and of high-diagnostic quality systems are now feasible, and build on compression ratios and error resilience tools found in current state-of-the-art video coding standards, linked with low-delay and high-bandwidth communications facilitated by new wireless systems. To achieve this however, these systems need to be diagnostically driven. In other words, both encoding and transmission need to adapt to the underlying medical video modality's properties, for maximizing the communicated video's clinical capacity. Moreover, the proper mechanisms should be developed that will guarantee the quality of the transmitted clinical content. Current video quality assessment (VQA) algorithms are unsuccessful to replicating clinical evaluation performed by the relevant medical experts. Clearly, there is a demand for new clinical VQA metrics. This lecture reviews medical video communication systems. It highlights past approaches and focuses on current design trends and future challenges. It provides an insight to the most prevailing diagnostically driven concepts and the challenges associated with each system component, including pre-processing, encoding, wireless transmission, and quality assessment. It discusses how exploiting high efficiency video coding (HEVC) standard, together with the emergence of 4G wireless networks, is expected to deliver the m-health medical video communications systems that will rival in hospital examinations. The latter, linked clinical VQA that will correlate with clinical ratings is expected to aid the adoption of such systems and services in daily clinical practice.

Keywords: Systemics, technological Advantages, m-health

VKN-01.01

An Organizational Cybernetics and ICT based approach to collective discussion of complex issues

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EXTENDED ABSTRACT

It is known (Conant-Ashby Theorem) that the quality of the decisions made by managers is limited by the quality of the models they use. The turbulent environment in which they have to carry their activity requires that they should use adequate models for the task. In this keynote talk I will start commenting on how the use of a framework based on Beer's Organizational Cybernetics and Viable System Model, can help managers to get a comprehensive view of the organization they seek to govern, identifying the organizational logical levels needed to cope with the complexity of the relevant environment, as well as the key elements to be considered at each of them. Next I will refer to how Organizational Cybernetics related concepts could be used in combination with Information and Communication Technologies (ICT) to facilitate the organization and development of group discussions on complex issues and how ICT tools can help groups of people, firstly, to generate variety in response to an issue of common interest and, secondly, to guide the discussion process towards an aimed limited set of content rich issues. The presentation will end showing an example of an Internet based software tool (Debates Organizer) developed within the Systems Thinking and Organizational Cybernetics Research Group of the University of Valladolid (Spain) to facilitate any size of groups of people to organize debates on complex issues.

Keywords: Organizational Cybernetics, ICT

VKN-01.02

The Need for a Purposeful Healthcare System

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EXTENDED ABSTRACT

Historically, many of the advancements in health care came through public health efforts (clean water and sanitation, vaccinations, etc.), and those remain a focus of global health initiatives. An increasing focus in healthcare, however, has been in high-tech equipment and specialized pharmaceuticals. Estimates are that global healthcare expenditures exceeded US \$7 trillion in 2013 (10.6% of global GDP), and will continue to rise as economies strengthen, and as populations age. In addition, in 2014, the World Health Organization and the World Bank jointly launched a monitoring framework for Universal Health Coverage.

Healthcare delivery in many countries, much less as a global network, is often fractured and inconsistent at best. Costs have little relationship to outcomes. Before committing significant resources to increase the same fragmented systems, some clearer goals for healthcare need to be established. In systems terms, we need to create a more purposeful system for healthcare in order to address the most pressing needs, as well as providing desired services to the extent that those can be achieved.

Keywords: Health Care Systems, Purposeful

WS-01

Scientific Areas: Banking, Keynote - Workshop

Medicinal Product Development and Health Care: Change of the Paradigm

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EXTENDED ABSTRACT

Over many decades the path of new medication development from the discovery laboratories to the market and ultimately to the consumers has been essentially the same, going the long way from pre-clinical testing, through the three typical phases of clinical trials, namely, the first exposure to men, finding the target therapeutic dose and large scale safety and efficacy studies, up to filing the dossier to the Regulatory Authorities for marketing authorization, and finally, monitoring the long-term safety in post-marketing studies.

This traditional way, however, has reached its limits in terms of cost and time required in order to bring a new medication to the patients. Nowadays, the average cost of a new drug development is 1 – 2.5 billion dollars, which is five times higher than in the previous decade, and takes 12 – 15 years leaving 5-10 years to get revenues before falling off the patent cliff. In addition, it is more and more difficult to produce new medications, not talking about potential block-busters. While 10 years ago about 100 molecules were tested in order for one to reach the market, the number has increased ten times, thus, testing 1000 molecules so that one can make it to the market. This attrition rate again contributes to ever-increasing cost of any new drug development.

Technology advances, re-shaped regulatory environment and harmonisation, increased patients' education and awareness as well as novel approaches to Quality by Design in the industry, pharmaceutical product portfolio management, study funding and personalised therapies have initiated the paradigm shift in drug development resulting in new ways to address the burning needs to shorten the time from discovery to market and reduce the cost of drug development, thus, the expenditures of health care payers, as well as to address better the diverse patients' needs and support innovation.

In this workshop we will take together a new molecule journey from discovery to the patient comparing the traditional way to the new approaches, outlining the main differences, advantages, ethical considerations and challenges as well as the maturity to adopt these changes. You will have the opportunity to articulate your experience, contribute with comments and ask questions. We hope to welcome the representatives of the industry, patients' associations, public, regulators and other stakeholders, having a productive discussion.

Keywords: Medicinal Product Development and Health Care

WS-02

Advanced Technological and Computational Platforms for powerful STEM Education

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EXTENDED ABSTRACT

As computation and technology evolves, a systemic integration between Knowledge, Computation and Technology is inevitable in all stages of education. In this workshop we will present a set of platforms that provide cutting edge tooling for STEM education (Science Technology Engineering Mathematics). From a purely cybernetical – Paskian point of view this set of tooling helps to structure a technological metalanguage that can be utilized next to the traditional scientific languages applied in schooling Ti-Nspire:

TI-Nspire™ CAS (Computer Algebra System) platform provides algebraic capability to symbolically solve differential equations, find exact solutions in irrational forms and, model data sets and test hypothesis. It is also capable of direct data logging and manipulation making it a robust hands-on learning tool that satisfies math and science curriculum needs from middle school through college.

Arduino prototyping and modeling , Raspberry Pi, Affordable 3D Printing.

This combination of tools offer the capability of creating embedded interactive environments for integration of formal knowledge with technology and artifact implementation.

Wolfram for Education offers an integration between knowledge and computation. It provides an expanding ecosystem that provides instant and powerful student-accessible computation, data and simulation capabilities.

Case studies will provide real examples from the European School Brussels III.

Keywords: STEM, Technological, Educational, Systemics, Platform

WS-03

Application of the system of Neuro Linguistic Programming in advancing health professionals' communication skills

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EXTENDED ABSTRACT

The situation in the European market has changed, and health professions face a changing attitude of patients, patients' entourage, as their needs become more demanding. Communication with a patient and patient's entourage (his/ her relatives) is a very specific type of contact. It involves a process that may require a certain level of empathy as well as knowledge on how to guide and deploy the conversation with the patient to receive necessary information to communicate more efficiently with their challenges and also encourage patient's cooperation throughout a course of medical consultation or treatment or a medical process in general. The system of NLP derived from a process of modeling patterns of excellence and provides a set of advanced methodologies for effective communication approaches.

Keywords: Systemics, Neuro Linguistic Programming

WS-04

Health Care Quality and Safety Management Systems

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EXTENDED ABSTRACT

Healthcare services' complicated elements and outcome depend on the settings, human resources and available technology. The health care sector is a segment, strictly regulated, based on international and local norms as well as operational frames, and, consequently, its compliance to these relevant pre-requisites should be always adequately proven as valid. According to the Euro barometer and WHO 2014 Facts, 20--40% of health expenditure is wasted due to poor quality in care. Safety studies indicate that extended hospitalization duration, litigation costs, social support of disabilities due to medical errors, and lost productivity of the healthcare system amount to over than \$19 billion, annually. Despite technological advances in healthcare, well-informed 'consumers' of the 'digital' century (patients, insurances, 'buyers'), are rather skeptical and lack of confidence in healthcare services, unless a 'seal of quality' is identified and awarded to the healthcare facility.

The last decades, healthcare quality is based on patient-centered perceptions and it correlates to the provision of appropriate care to the right patient at the right time. Quality management systems' implementation goes beyond this approach, in the direction of delivering consistent quality, and undergoing reliable processes. Reliability requests the existence of performance goals and improvement policies, risk management procedures, quality measurement and data analysis mechanisms. Within this setting, patient safety is undertaken as a prime goal to be accomplished by the modern healthcare systems and in order to be effectively realized, a strong safety culture should be set as priority in business orientation and in countries' strategy.

National authorities and specialized organizational structures have not yet managed to reach the level of effective risks' identification and handling, concerning either the public or the private healthcare sector, in Greece. At the same time, the accelerating implementation of new restrictive financial models in addition to economic recession that ties quality outcomes to payments, raise the risks associated to quality and safety impacts. The need for a protective infrastructure to safeguard patient safety concerns, is continuously growing.

What is proven and will be identified within the workshop, is that, decreased quality in the healthcare setting, and unmanaged care, have rather questionable effects and at the same time, are indisputably more expensive, whereas, quality management tools contribute to evidence-based, effective and efficient service provision.

Keywords: Health Care Quality, Safety

WS-05

Microexpressions and Recruitment (HR) at Pharmaceutical Companies

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EXTENDED ABSTRACT

Searching for the ideal candidate during time periods with high unemployment rates, increases radically the searching processes' complexity. We approach the candidate mainly as the ideal partner and we train his skills based on his character. Consider as the most important element of the person you will work along with every day, to be not only his communication skills and abilities, but also to find the ideal candidates of your company and also deepen in the growth of your team building and cooperation strategies in (or out of) your organization. Our partners' success, is a result of investing in our team and our investment is shaped by everyone's participation. Maybe degrees, seminars or certifications typically will make our candidates suitable for our company. But consider that for your team's success the most important ingredient is your team members' characters. Our purpose is that our selection criteria, will compile character, team working ability and typical qualifications in such a way that the next hiring will be not only a win to win relationship, but also highlighting a new leader. Applying all the above definitely includes Micro-expressions reading and as a more effective method to verify the psychological state of your participant. Micro-expressions are involuntary contractions of facial muscles, which arise from the emotions that they feel at a particular time. Micro- expressions are concise and revealing to recognize the emotional state of the interlocutor in order to make a productive communication, negotiation and to understand if he lies or not.

Keywords: Human, Resources, Systemics, NLP, Recruitment

WS-06

Creating Contemporary Health Tourism Destinations

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EXTENDED ABSTRACT

The Workshop aims to explain, in practical terms, how Contemporary Health Tourism Destinations are created – and what makes them successful, sustainable and resilient.

healthCare cybernetics – hCc - (a UK-based Health Tourism Sector think and do tank) is associated with the design of Contemporary Health Tourism Destination Master Plans.

These plans address Destination:

- Creation (an Efficient and Competitive Health Tourism Destination – “ht8 Destination”) [Phase 1]
- Further Development (Competitive Advantage – “Health Tourism Destination Excellence”) [Phase 2]
- Enhancement (Competitive Edge – “Health Tourism Destination Singular”)

[Phase 3]

“...health in GREECE” is the Phase 1 Master Plan for the development and promotion of Greece as a Contemporary Health Tourism Destination. Phase 1 Master Plans involve the parallel implementation of 5 “underpinning” Stakeholder Concerted Actions (collectively known as the Health Tourism Pentad):

- Segmentation
- Integration
- Administration
- Development
- Promotion

The Health Tourism Pentad approach (introduced by hCc) is now being adopted and implemented by Contemporary Health Tourism Destinations as Dubai. The result is an integrated, efficient and competitive Health Tourism Destination offering services in the 8 Health-related Segments:

- Medical Tourism
- Dental Tourism
- Spa Tourism
- Wellness Tourism
- Culinary Tourism
- Sports Tourism
- Accessible Tourism
- Assisted Residential Tourism

Keywords: Health Tourism

PP-01

HEALTH CARE CONSULTING I: Administration and Innovation

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EXTENDED ABSTRACT

The health of every country is a neuralgic area of particular relevance. The provision of health care in all its manifestations and applications, characterized by severe peculiarities fragile balances, diverse and complexity. The influences of health care spanning at several areas of social structures, which affects and is affected by them. Our involvement with the health sector require knowledge of the actual application environment on a specific time and on specific social and cultural conditions. The health is undoubtedly nonnegotiable social good and a regulated profession personal right. The health as a good is an integral to the actual and legal dimension of the personality concept.

In this professional panel we approach the structure of health care provision, identifying errors, deficiencies, omissions and propose modern and dynamic solutions using systemic methodologies.

We shall examine issues related to the legal and regulatory framework of the drug space, medical equipment, certifications in providing health care, management of primary and secondary health care and corporate governance in the companies related to the creation and manufacture of medicinal and medical material in a real environment applications.

Also, we shall examine innovations on the legal and legislative addressing key issues in the provision of health care and operation of health facilities. In this part are situated the supplied credentials and proper functioning of controls in the management of the provision of health care at primary and secondary level as well as corporate governance entities involved in providing health care. The aim of these approaches is to create a dynamic improvement process in the provision of health care, to avoid uncontrolled further problematic situations and improve the quality of life of patients.

The proper provision of health care reduces the complexity in the wider social sector and is an indication of culture for a society.

Keywords: Health Care, Administration and Innovation

PP-01.01

The use of DCSYM Systemic Methodology for the Legal Fortification of Health Units

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EXTENDED ABSTRACT

In this paper we shall present the application of DCSYM Systemic Methodology in the Blood Donation Department of the Laikon General Hospital in Athens as a strategic organizational approach in order to help us to formulate our legal strategy for the fortification of this health unit. The design of the DCSYM is the tool or the language of communication with the people of the Blood Donation Department of the Laikon General Hospital for their better legal fortification.

Building on the implementation of DCSYM Systemic Methodology in the Blood Donation Department of the Laikon General Hospital in Athens for efficient operation, the legal fortification of this health unit includes:

01) Rules for Operation, 02) Contracts with workers, 03) Contracts with suppliers, 04) Laboratory trials, 05) Safety rules in all of the activities of the Unit, 06) Ethics agreements, 07) Protection of personal data, 08) Research protocols, 09) Rules of compliance, 10) Rules of management and distribution of blood, 11) Contracts of confidentiality on all parties involved in the Unit, 12) Protocols explicit consent of blood donors and/or patients to the Unit.

Keywords: DCSYM, Rules for Operation, Contracts at Health Unit, Protection of personal data

PP-01.02

A systems approach to integrating outsourced services into a health unit's operational processes

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EXTENDED ABSTRACT

Most management systems employed today respond to the ever-increasing level of complexity by embracing a process approach. Within the context of a process approach, a process may be defined as an integrated set of interrelated activities that uses resources to transform inputs into outputs. The quality of the transformation activity is dependent on the relationship between the process variables, which are the people, equipment, input material (or information), methods, and energy that interact in a given operating environment for the purpose of producing a desired output. The operational capability (performance) of a process depends on the manner in which the process variable has been designed to interact and on the manner in which they are operating. A system is said to exist when a number of interconnected processes interact in such a manner that their input-output relationships constitute the operational utility within the overall purpose or defining function of the whole. That is to say, the output of a single process (or a set of processes) forms the input (or inputs) for another process (or set of processes), within the boundary of a defined whole, affecting the overall performance of the whole and being affected by the whole. It is important to stress here that the system is not the sum of the processes of which it is comprised, but rather the product of their interactions. Thus, through a process approach, a loose network of processes is turned into an integrated system.

Increasingly, organizations in the health-care sector are choosing to outsource a number of their key activities (processes) for the purpose of acquiring economic benefits, improving operational capabilities, and achieving quantifiable results. These processes include product manufacturing, logistics, pharmacovigilance, regulatory affairs, and clinical trial management, to name a few. According to ISO 9001:2008, an "outsourced process" is a process that the organization needs for its operational system and which the organization chooses to have performed by

an external party. An outsourced process can be performed by a supplier that is totally independent from organization, or which is part of the same parent organization (e.g. a separate department or division that is not subject to the management system). It may be provided within the physical premises or work environment of the organization, at an independent site, or in some other manner.

When choosing to outsource a specific process, the organization has to demonstrate that it exercises sufficient control to ensure that this process is performed according to the relevant requirements of the management system that it engages. The nature of this control will depend on the importance of the outsourced process, the risk involved, and the competence of the supplier to meet the process requirements. If outsourced processes are to interact with other processes from the organization's Management System (these other processes may be carried out by the organization itself, or may themselves be outsourced processes), these interactions also need to be managed.

This work will address a number of issues relating to control of outsourced services typically found in the health-care sector, including, the strategic assessment that is carried out for the purpose of examine the current and analyze the future strategic position of the organization, to understand where outsourcing as a strategy fits in. The major elements of the strategic assessment stage include: business-value assessment, regulatory and legal review, operational assessment, financial assessment and risk assessment. The outcome of these assessments is the outsourcing business case and forms the bases for recommendation for outsourcing.

Keywords: systems approach, outsourcing, legal review of outsourced services

PP-02

Project Management in Health Care:

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EXTENDED ABSTRACT

Worldwide organizations are achieving their business results in two distinct ways: Business As Usual (BAU) or Changes. Business As Usual, also called operations, is mainly dealing with day to day operations. On the other hand, changes in most cases lead to project initiation in organization. Actually projects are the only way to implement changes inside organizations.

According to World Health Organization (WHO), 10.1% of the Global Gross Domestic Product (GDP) in 2012 (about 8 Trillion USD), was spent on health. A lot of this money was spent on projects for new product development. Health companies run thousands of projects in order to develop new drugs. An article published by Forbes on 11th of August 2013 notes that the cost of creating a new drug is about \$5 Billion, pushing pharmaceutical companies to change. But, 95% of all new projects for drug development fail.

So, health care industry is one of the most active industries worldwide using project, program and portfolio management to face competition and achieve strategic business goals. Organizational Project Management helps health care organizations to develop capabilities and competence in Project, Program and Portfolio Management.

When health care organizations embrace organizational project management, organizations are improving their processes for aligning project, programs and portfolios to business strategy and needs that support the organization's goals. This means better performance, better results, and a sustainable competitive advantage in the marketplace.

This professional panel will discuss how Organization Project Management in Health Care can help organizations achieve competitive advantage.

Keywords: Systemics, Project Management, Driving Results

PP-03

HEALTH CARE CONSULTING II: Doctors' experience

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EXTENDED ABSTRACT

The suggestions of this Professional Panel are focused on some experiences of combatants doctors through their daily contact with the provision of health care in the areas of application, and with their patients.

The doctor, due to the way of the operational mode of providing of health care, is the person, who is situated between the patients, between the companies carrying out clinical trials, between the pharmaceutical companies, between medical equipment companies, between the interests of private clinics and the overall administration of the health sector within the public or private sector. The battleground practice of medicine render the doctors automatically persons who have prototyping, who have innovate and who have mature through the daily exercise of their science. The innovations have immediate effects primarily for patients but also to all relevant stakeholders in the provision of health care in both sectors, namely in the public and in the private sector. Examples of innovation include: minimally invasive surgical methods, followed to a large number of diseases, advanced medical equipment, continuous improvements in the manufacture of drugs and innovative development. All the above related to serious issues in the provision of health care in a real environment of applications and require knowledge of the particular environment and knowledge of human - patient.

Following the above mentioned cases it becomes understandable why the reference to Hippocrates' "Aphorisms" that "it is impossible to know medicine, if you do not know exactly what human is" finds now its most resonant higher impact.

Keywords: Health Care, Doctors' experience

PP-03.03

Body modification and Health Care

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EXTENDED ABSTRACT

The success of a body modification procedure –whether reconstructive or aesthetic- and the satisfaction of the submitted in the procedure from the care that will receive, is determined by a combination of factors, the actualization of which is a challenge for the plastic surgeon. The sufficient scientific training of the plastic surgeon, continuous updating and the knowledge of technologies are essential components for a safe and high-level healthcare. The qualitative communication between plastic surgeon and the individual who is interested in a plastic procedure, during the preoperative consultation, and the mutual information, honesty and trust is the foundation upon which a fruitful cooperation is built. The weaknesses of the biomedical model (which was focused only on the biological needs of the individual) and the modern trends in medical science have led to the holistic and person-centered approach of the candidate for plastic surgery, which not only does not exclude his emotions and views, but take them into account and utilize them –both preoperatively and postoperatively- in favor of more qualitative healthcare and his increased postoperative satisfaction. In this context it is necessary the sufficient understanding of the way in which the candidate experiences his body and plastic procedure, his socio-emotional condition, as well as the focus on his individualized needs. In these developments has contributed decisively the more formal collaboration between medical science and social sciences.

Keywords: Health Care, Body modification

PRT

Healing the Healthcare Organization: A Systems Approach

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EXTENDED ABSTRACT

Twenty-five hundred years ago, Heraclitus of Ephesus argued that “there is nothing permanent except change.” The resilience of this argument is certainly more compelling today in light of the dynamic complexity of an interconnected world in which stubborn problems persist despite our noblest efforts to address them. Organizations in the healthcare sector are increasingly realizing that their very survival often depends on their ability to change. In fact, in the context of today’s fluid environment, change may prove to be the key challenge for the modern organization, and its ability to successfully align internal processes and capabilities to the various influences to which it is subject, paramount in ensuring the viability of its structures and functions so that they continue to support the organization’s purpose.

While the need to frame the issues that warrant action as part of a structured process is tenant for the modern organization’s continued existence, capturing the essence of convoluted problem situations rarely occurs as an objective event. Interpretation of the essential properties of observed phenomena involves observer participation, a reciprocal process in which both the observer and the phenomenon observed constantly form and reform one another. This interaction enhances the ambiguity of the causal relationships embodied in the perceived phenomena, further increasing the difficulty of framing the issues associated with the problem at hand, exploring the variables involved, and formulating actions to achieve a desired state. As dynamic complexity increases, the expected results of management decisions are increasingly difficult to anticipate and the organization’s capacity to maintain consistency of purpose diminished unless these decisions reflect a fact-based proactive posture, within the context of a holistic approach.

Yet most traditional management tools employed to support decision makers lack the sophistication to effectively address the dynamic complexity inherent in the modern organization’s operating environment, relying on simplification rather than holistic treatment of complexity. They tend to embrace a single perspective and direct attention to the symptoms rather than the underlying structures which 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 that vary in strength and direction, and non-linear relationships 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.

Systems thinking is the process of understanding how various elements affect one another within a defined unified whole. A systems approach emphasizes the important difference between considering the function of the parts that work together to create a unified whole based on their relations with one another within the system's larger context, versus considering the linear cause-and-effect chains in a disconnected set of parts (reductionist approach). Although the concept that complex wholes are formed from smaller elements is common to both reductionism and systems theory, the reductionist approach focuses on simplifying the whole by focusing on the isolated elements (analysis), while systems theory addresses the dynamic relationship that exists between the elements of the whole focusing on the behavior that emerges from their interaction (synthesis). Through analysis, one gains knowledge of the structure of the system, answering questions associated with "how a system works". Synthesis on the other hand yields understanding by focusing on "how the system functions" and "why" it functions the way it does.

The theme of the roundtable discussion will concentrate on the manner through which the modern organization or business in the healthcare sector can adapt a systems approach through which to address complexity. Specifically, the discussion will focus on effective means through which decision makers can proactively respond to both internal as well as environmental influences: identify the interrelated and interdependent elements interacting as a structured functional whole (system); determine the flows between these elements and their systemic relationships, recognizing recurring patterns of the system's behavior over time; align the organization's strategic priorities and tactical planning to the system's operational capabilities, through formal methods, dynamic tools and structured initiatives; and finally, develop and implement monitoring and measurement mechanisms which will provide feedback relative to the system's performance following intervention.

Keywords: Healing, Healthcare, Organization, Systems, Approach



Extended Abstracts

EA-01.01

Scientific Areas: Business Process Modelling,

DCSYM Methodology and SWOT Analysis as Tools of Process Recording at DAEM S.A. Company: An Attempt to improve existing Company Processes using Systemic Methodologies

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EXTENDED ABSTRACT

DAEM SA Company, presented in this paper, is the oldest and most important IT company in the computerization for the municipalities of Greece. Its conversion into a public limited development company for municipalities, that took place in 2008, marks its new dynamic extrovert policy.

The company's vision is the "human", which is an essential of DAEM's strategy. For this reason, the company is able to provide technological services with a human face, and there is a special emphasis on an anthropocentric and rational management approach of its labor and executive staff.

The aim is to improve the company's operations by reducing all unnecessary complexity and restructuring some (or even all) problematic corporate processes. This requires compliance with the redesigned processes by the company's staff as far as possible and new CRM software will be probably necessary, that must be developed according to the company's requirements.

This paper is focusing on the company's existing hierarchical structure and examines the way DAEM operates. This operation reveals every difficulty that causes increased complexity and systemic pathology.

The representation of the company's operation is done using Design and Control Systemic Methodology (DCSYM). This has become even easier because of the DCSYM Case Tool, a software application that can carry out each communication, marked by various communication types at DAEM's current state. The DCSYM Methodology spots the interaction among the subsystems which constitute the total system of the company, and inquires the kind of communication, whether it is potential conflict, good communication, purposeful action, general interaction, distorted communication or distorted purposeful communication. Its purpose is to establish communications between the parties that are characterized by clarity and security and that are no mistakes in their execution. Communications and processes must additionally be easily identifiable, so that their operation is clear to someone that comes in contact with them for the first time. DCSYM is able of creating procedures for the company, which will be best as possible without unnecessary intermediate steps. DAEM's systemic improvement will take place via DCSYM Methodology as well.

A SWOT analysis takes place along with the use of DCSYM Methodology, which refers to DAEM's strengths and weaknesses that the company has, to its threats and opportunities that may appear, in order to make the maximum use of the dynamics of the company.

A simulation of a subsystem of DAEM SA Company will be held using the ADONIS Software. ADONIS is a business process modeling tool that helps companies describe the way that various corporate processes have to operate, so that an optimal solution could take place. ADONIS Software encourages the modeling of processes as well and improves knowledge sharing.

Both DCSYM methodology and the tools described above will provide all information needed, so that the company will be able to make significant progress by reducing most of its disadvantages and empower its existing strengths, which will produce new corporate knowledge and wisdom in the end.

Keywords: DAEM SA, DCSYM, SWOT, ADONIS

EA-01.02

Scientific Areas: Business Process Modelling, Knowledge Management

A systemic model for analysis of marine incidents

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EXTENDED ABSTRACT

The purpose of this paper is to design a model for analysis of maritime incidents. The main objective of the paper is to better understand the role of the human element, in relation to other systems and subsystems of the environment. The variables are not metric and they are clustered into specific categories and connected within their relationships. The final result of the model is to provide a methodology with valid and reliable information in order to reassure an effective incident analysis, with respect to the maritime operating environment.

The model development can be operated to different databases, transferring the theoretical and practical values of an incident analysis, without viewing an incident as a sequential chain of events in a specific order. The model development is based on systems and subsystems relationships or a combination of relationships focusing in different model resolution based on the environment's complexity. The paper concludes with a summary of the research findings and recommendations centralized to human factor, results a trending will allow a maritime company to look across all the investigations that have been performed and to identify common factors are related to different incidents.

Keywords: maritime, incidents, human, model, environment, complexity

EA-01.03

Scientific Areas: Business Process Modelling, Procedural Systems

System Dynamics Simulation for a Pharmaceutical Company with the use of, Business Model Canvas, Systemic Methodologies and their relevant software: DCSYM, System Dynamics

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EXTENDED ABSTRACT

A business plan can be a projection of the future of a business. It describes the purpose, the procedures and the structure of a business. It can define the vision, set future targets, organize actions to be taken and control the effective use of opportunities and resources.

The model system creation of Power Health Hellas procedures has been achieved by the assistance of Business Model Canvas. Business Model Canvas is a tool for the strategic business management. It allows the description, designing, creating, inventing and reviewing of the business model. Within this system many subjective factors are involved that affect the results of business procedures. For the science of system analysis, described by Peter Chuckland, it enrolls to a soft system methodology (SSM). Main purpose of this analysis, is to avoid taking rush decisions and implementation of non- detailed solutions from the key decision making people.

This project provides the analysis and description of the Simulation System of Power Health Hellas that produces and distributes food supplementary pharmaceutical and non for over 30 years.

The purpose of this simulation is to describe, to observe, predict and influence the decisions about which elements of the business model and how much affect sales of our products, business costs and ultimately profits. The issue approached in this model should answer to the following question: What is the ideal level of values that should be given to the customer relationships, the values put forward by the company and the "channels" of reaching the customers to succeed and anticipate the required demand for our products with the least possible cost for one year period.

The simulation was achieved by the use of Vensim software, which is a simulation software to improve performance of real systems. The rich feature set of Vensim emphasizes the quality of the model, the connections to the data, flexible distribution and advanced algorithms. After modeling the business environment it can be observed that during the execution of the simulation, how does all the variables are influenced when some of system parameters are altered.

Keywords: business-plan, simulation, Canvas, System-Analysis, pharmaceutical

EA-01.04

Scientific Areas: Project Management, Small- & Medium-sized Enterprises

Balanced Adaptability in Manufacturing SMEs

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EXTENDED ABSTRACT

The work put forward in this report describes the research conducted and the results obtained with regards to a medium-sized business in the road surveying sector. The company is the leading authority in automated road surveying in the UK and holds a respected position in the global market as a significant supplier of high quality road surveying vehicles.

After the 2008 recession which has impacted its growth, the company is now looking to improve its operation in the part of the business responsible for the construction of new vehicles. This improvement is aimed at the effectiveness of the teams involved as well as the efficiency of the processes and practices currently used.

Following an interview based data gathering approach and utilizing Grounded Theory and hermeneutic analysis on the collected data, the core of the problems experienced by the stakeholders have been uncovered and are presented. The problems identified were multifaceted but orientated around the lack of effective communication and coordination between parts of the business.

In more detail, the communication channels between teams were found inadequate to support a well-organized collaboration, with informal communication being worryingly the norm. Structurally the company allowed flexibility to its functional units, especially the one under study, to be able to adapt to environmental changes. However, the balance between formal and informal practices has not been the indicative with problems reported from all involved parties. Project management suffered as well with overstretched personnel performing a number of tasks such that it affected the quality of work they produced. People also reported the need for more coordination especially during projects, something that again tied well with the communication problems experienced. Furthermore, the requirements gathering process was not optimal especially for the kind of market the company is in (rapid changes, susceptibility to national financial environments), something that impacted on vehicle construction projects. As a result of the above, the climate within the system of interest has suffered with people feeling frustrated and often "out of place" during projects.

At the corporate level, corrective action is been proposed with this work, in the form of an adopted certified project management framework such as PRINCE2 or PMP. Also best practices from other similar size companies in the vehicle manufacturing industry are offered; especially towards knowledge management

and developing a learning organization that follows lean principles. At the team and individual level well documented and practiced approaches are being proposed so that stakeholders at the company feel adequately supported and empowered by higher management, to reverse the negative climate looming over project efforts. All in all, this company is suffering from problems that are quite frequent in small-to-medium businesses. If the proposed changes are adopted it is expected that the systemic approach to problem solving will prove extremely useful in the turbulent market the company operates in.

Keywords: SME, project management, manufacturing, asset management

EA-02.01

Scientific Areas: Business Process Modelling, Knowledge Management

A Systemic approach to Requirements Engineering using DCSYM and Ontologies

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EXTENDED ABSTRACT

In a competitive, rapidly changing and increasingly uncertain economic environment that makes business decisions complex and difficult, Companies are also confronted with new information and communication technologies, shorter product life cycles, global markets and tougher competition.

The partial or total restructuring has been a forced solution for most companies and organizations nowadays in order to be able to absorb the variety obtained from this hostile business environment in which they operate and in order to be able to maintain their viability in it.

It has also been commonly accepted that many of these projects fail due to the lack of a comprehensive shared understanding of the needs of the target users and behaviors to achieve the requirements of the projects.

Correct elicitation, specification and validation of the target user needs are becoming more and more crucial as the ultimate measurement for systems quality is the degree of user satisfaction.

Understanding the requirements of stakeholders is a critical factor to determine whether the system meets the purpose for which it was intended. Requirements Engineering (RE) is the process of discovering that purpose, by identifying stakeholders and their needs, and documenting these in a form that is amenable to analysis, communication, and subsequent implementation. That is, the requirements have to be formalized in a systematic way in order to support the design and development of the system while RE becomes the essential activity in which a variety of stakeholders must be involved.

With the advancement of technology, the world is becoming an increasingly complicated and overwhelming place. Systems are getting larger, more interconnected and more complex. With so much complexity, it is easy to reach a point of cognitive overload and collapse. Systems thinking provides the perspective and tools to address these challenges; a way to combat the chaos by assessing the problem as a whole system in a larger world and by approaching problem investigation and assessment in a systemic way.

The nature of RE, especially in complex systems, involves capturing knowledge from multiple sources.

The common term used in the field of knowledge representation is known as ontology, which is a formal representation of the entities and relationships existing in some domain of interest.

Ontology-based approach offers a good choice for knowledge representation concerning users, such as users' behaviors, scenarios, tasks, goals, and requirements.

In the present contribution, concepts from RE are first exposed followed by concepts of Systemic Thinking along with the Systemic Methodology DCSYM, which is presented in an extended format capable of meeting the Systems Modeling depicting requirements with Cybernetic orientation.

Concepts and types of ontologies are also described as well as the connection of ontologies with the Systemic Methodology DCSYM and their use in the process of RE since they help establishing a knowledge repository and knowledge representation concerning users, such as users' behaviors, scenarios, tasks, goals, and requirements, which can be re-used in different problem domains and with various and remote stakeholders.

Finally, a case study in an SME demonstrates the above concepts.

Keywords: Requirements Engineering, Ontologies, DCSYM, Systems Thinking, variety, complexity.

EA-02.02

Scientific Areas: Business Process Modelling, Small- & Medium-sized Enterprises

Business Process Reengineering of an Accounting Office using Systemic Methodologies

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EXTENDED ABSTRACT

This contribution refers to a small Business Process Reengineering project in an Accounting Office in Santorini. The whole endeavor organized around the Soft Systems Methodology employing DCSYM for systems modeling. It also incorporated aspects from the Viable System Model as well as some other tools and practices for the management field like SWOT and PESTEL analysis.

The accounting office (The Company) operates for several years and has a significant satisfied customer base. However, the level of service depends much on the direct involvement of the owner who is also the director of the enterprise. This way the staff turnover is difficult and hiring new employees especially under temporary fixed-term contracts is risky and tends to affect the level of the services experienced by the customers.

The purpose of the intervention was to redesign business operation in order to be strictly process based, incorporating measurable performance indices aiming at maximizing customers' satisfaction, establishing a new profile for the company and expanding its customer base.

To achieve the above goal the Accounting Office was considered as a system. One of the major tasks in the reengineering project was to discover the system and to document it as a network of processes using the SIPOC model (Suppliers, Inputs, Process, Outputs, Customers). During this transformation process the implicit organizational knowledge was transformed into an explicit and documented knowledge management system which was established and continued to be used after the end of the project. A part of the whole system was the information system which is in use in order to support the office works. This IT system became part of the process-based management system and its existing functionality was significantly improved after being a part of the whole system at the end of the reengineering project.

During this project the following systemic methodologies were used: (1) The Soft Systems Methodology (SSM) used to manage the "mess" consisting of business and environment requirements, customer's expectations, employee's perspective and many other complexity factors. The reengineering issue was a perfect field to apply the SSM including models of the current and desired state as well as the CATWOE statement of the problem.

(2) Specific aspects of the problem domain were defined using PESTEL and SWOT analysis.

(3) The Viable System Model (VSM) was employed in order to examine and verify the lifetime viability of the small office.

(4) The Design and Control Systemic Methodology (DCSYM) was used to create the models like the internal structure of the office, the external environment as well as the network of processes. The DCSYM CASE TOOL was used to create the graphical representations.

The result was a new process-based operational model, a semi-automated process flow as well a renovated information system incorporating ERP features able to manage all information handled by the office.

Keywords: Systemics, SSM, DCSYM, VSM, Accounting

EA-02.03

Scientific Areas: Business Process Modelling,

Managing diversity and modeling of effects of several factors on the activities of a System: A Systemic approach to optimize procedures in one of the Services of General Interest in the water market

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EXTENDED ABSTRACT

The prosperity of any business, regardless of the type of its legal nature, and the industry in which it operates, depends largely on the procedures which have been laid down for it in order to be flexible and adaptable to continuous changes in a dynamic environment. This need has become more urgent due to the global financial debt crisis plaguing the international markets in recent years and in particular Greece. In other words, processes reengineering and the elimination of bureaucracy at all levels, has to become a way of life for every business, including those of General Interest, for them to be adapted to the requirements of a demanding external environment, in order to mitigate social distress and consequently upgrade the living standards of the consumers they serve.

The present case study attempts to give directions for reorganization procedures in a key part of an under investigation General Interest Organization of and more specifically the Research Department - Construction Sector, making use of Systemic Analysis methodologies and the Viable System Model. The examined sector provides technical services (design, construction, maintenance and network expansion) to approximately 1 million customers, which, in combination with the type of product it provides - social good(s) - creates high responsibility in terms of providing direct, prompt and high quality services.

This paper is divided into three parts. The first part presents the current state of the department, where all procedures and communications which take place within it, are designed with the help of a systemic tool DCSYM. Having a complete picture of the destroyed communications, proposals for improvement are given in the second part of the paper in order to establish documented procedures, which will place emphasis to the customer as well as social responsibility. Finally, the concept of Ontologies is demonstrated at the third part of the paper as a connection of knowledge management to business success.

Keywords: Social Good, Social Responsibility, DCSYM, Ontologies, Joget, VSM and Anylogic.

EA-02.04

Scientific Areas: sustainability,

Regional Tourism Development through Renewable Energy: A systemic governance approach

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EXTENDED ABSTRACT

Is renewable energy capable to be used as an instrument to achieve regional development in a systemic governance approach within the tourism sector?

Within this concept, our effort is to challenge this question by critically assessing specific case-studies located within the global tourism industry, where various stakeholders interact under specific systemic conditions.

Our objective will be to question several governance schemes linked to utilization of renewable energy and explore which are the drivers affecting the specific relationship between regional tourism development and renewable energy on a sustainable axis. This approach will help to identify step-by-step (systemic) governance processes that could facilitate the transformation of saturated tourism models to niche tourism markets and of exogenous threats to endogenous sustainability and development under certain conditions.

Finally, we also question whether systemic governance through utilization of renewable energy instruments leads to regional tourism development or it is the opposite i.e. regional tourism development that leads to renewable energy exploitation. We determine that the second question prevails.

Keywords: RES, Tourism, Sustainability, Governance

EA-03.01

Scientific Areas: Education & Learning,

Games and MOOCs in Medical Education

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EXTENDED ABSTRACT

Education nowadays has incorporated all technological developments including e-learning, m-learning and games. Additionally, the evolution of Web has improved not only online learning, but also Life Long Learning. Unambiguously, in our days, Educational Games and Massive Open Online Courses (MOOCs) have gained in popularity and recognition. Games and especially online games, are widely used in education as they are structured and at the same time are giving fun and provide collaboration in between players. Recognizing the validity of games, some educational Institutions worldwide, have introduced games as part of their teaching process in their undergraduate study programs. In our days, MOOCs are very popular and cover almost all scientific topics. Currently, MOOCs are offered from a lot of Universities, in different languages, so students of any age and place of residence can attend them. On the other hand, this rapid increase of MOOCs has in a way overlooked the pedagogical background of the delivered courses. As MOOCs require more skills of self-regulated learning than any other teaching method, participants have to be familiar with methods supporting or improving self-regulated learning. So, games in MOOCs, as a new initiative, may provide higher levels of self-regulation skills combined with fun. According to recent studies, it is not widely used by medical doctors, gamification within MOOCs by means of life-long learning programs, although medical doctors have to update frequently their knowledge and skills. In medical education, they often use MOOCs for lifelong learning, but the introduction of games in some medical specialties, like pediatricians, can give an alternative to the introduction of a treatment to young children. Additionally, in lifelong learning procedures, MOOCs are considered as a unique learning experience because students can interact with their professors and peer learners from all over the world, exchanging experiences and good practices.

The aim of this paper is to present information for educators and medical doctors about games and online learning material. According to the results of our study, medical doctors and educators, want to use online games in order to introduce a treatment to children and also to add games in MOOCs for Life Long Learning.

Keywords: games, Moocs, Life-long learning, educators, doctors

EA-03.02

Scientific Areas: Education & Learning, Social Approaches

Using Interactive Video For Health Education

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EXTENDED ABSTRACT

Dynamic content, interactivity, cooperation, sharing information and social networking are key concepts in Web 2.0 environment. Many argue that Web's new features cause a revolutionary change in the field of ICT as well as in education. Compatibility with international standards, usability, scalability, and the ability of personalization are characteristics that can improve teaching methods. Teaching material that meets certain standards can be used and reused as open educational recourses.

Video is an educational tool that is used to enhance communication, interaction and prior knowledge practice. Moreover, it promotes personalized and collaborative learning, critical thinking and creativity. Interactive video is used more and more in the educational process during the last years. At the same time, most MOOCs (Massive Open Online Courses) use educational video in various types and forms, within a range of teaching methods. Some of these forms are video lectures, talking head videos, Kahn style videos, screenshot videos, documentaries and many more depending on the MOOC provider.

Recent studies have shown that the use of video can facilitate participants to reflect upon and comment on the courses learning material in an interactive manner. This practice applies in all levels of education, as it motivates participants of all ages. Secondary school teachers and college health education majors examined the possibilities and procedures of using YouTube videos as teaching tools in health education.

In their studies they found that video was an effective and engaging tool that promotes learning.

Additionally, in health professions' training, video is a common practice that enriches classroom lecture and serve as an additional study material. Blended learning models adopt video use. Blended learning models have been applied in order to raise students' awareness in health issues and also to inform them about the prevention of certain diseases. The use of educational video is very common in training professionals for child and family health. Popular MOOC platforms provide health related courses mainly based in educational video. In order to promote the use of educational video, the Laboratory of New Technologies and Distance Learning organized a series of lectures that were

attended by students of the Department of Early Childhood Education. In these lectures relevant videos were projected and students were informed about good practices of video use from educators and doctors for raising awareness in medical issues. The majority of the students found interesting this learning tool and declared that they would use it in their classroom. Also, they admitted that they did not have a prior experience of video use for information about medical issues in the kindergarten. Almost all of the students believed that the use of educational video would be suitable for providing young children knowledge about health related issues.

Keywords: educational interactive video; early childhood education

EA-03.03

Scientific Areas: Education & Learning, Public Sector

Organization and structure of certification program «2nd-Level» for educators of Greek Ministry of Education and Religious Affairs with the application of DCSYM methodology

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EXTENDED ABSTRACT

The current study refers to the radical technological development in the field of Information and Communication Technologies (ICT) which change the world by all views, including also education. The conditions of education in the contemporary school, the knowledge, the skills and the attitudes that the pupils are expected to obtain should respond to the requirements of the society as they are modulated in the above situation.

The targets of CTI are to create a pupil-oriented educational process in the "New School" where the pupil has active participation in learning activities and individualized teaching. Additionally it improves the provided education, promotes lifelong learning and strengthens the innovation and creativity. Continuing we study and approach the project «2nd-Level» and design the current process with the usage of DCSYM systemic methodology. The specific methodology allows us to depict the systems that are under investigation and the way they communicate each other as well. The result of this is to detect any possible malfunction and export applicable solutions in order to solve the issues. The application of DCSYM allowed us to enlighten the gaps of the above project and proceed by suggesting recommendations for improvements. It allows us to build a situation which lasts during the years and can be used as a decision making tool with objective criteria in order to control and rearrange the functions of the project.

The recommendation for improvements used in order to redesign the project by using the same methodology.

Finally by this study, among others, we conclude that the education should be according to the season, respond at many and utilizes the past and stimulates innovation and creativity.

Keywords: DCSYM, education

EA-04.01

Scientific Areas: Operations Management , Healthcare Management

Applied Process Mining in a Blood Bank and correlation with the Systemic Approach

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EXTENDED ABSTRACT

This contribution presents a Process Mining application in the Blood Bank division of a public hospital in Greece and aims to explore the relation between Process Mining and the Systemic Approach.

Process Mining is a set of methods, tools and techniques that allows business process analysis based on event logs produced by the information systems. Process Mining can be used for three main purposes: (1) To discover the process model from the event log (2) To check process conformance with an existing process model and (3) To improve an existing process model based on actual process information found in the event log. Process Mining (PM) can be applied in a variety of domains.

This specific application comes from the healthcare area and, more specifically, from the blood bank division of a hospital. In this division the blood is collected from donors, separated into blood products, stored, and prepared for transfusion to patients. The PM "Case" is the Blood Unit and its route from donation to transfusion. Activities in blood unit lifecycle include: Donation, Laboratory Testing, Splitting into products, Compatibility testing, Sending, Returning, Transfusion, Destruction etc. The events data correspond to blood units donated in a period of 3 months.

A lot of Process Mining techniques offered by "Disco" and "ProM" software tools were applied in order to extract useful conclusions regarding the route of a blood unit. A surprising finding was that, although the process is well defined and the operation steps seem to be predictable, setting high level of details in software a too complex model of processes was revealed. The causes were discovered exploring event data and employing PM techniques.

In PM literature it is widely accepted that a holistic approach is needed to derive the right conclusions from event data. Holistic approach refers to Systemic Approach or to Systems Theory methodologies and tools. In this study we argue that there is a strong relation between Process Mining and Systemic Approach.

PM concerns about systems of processes existing in the context of Process Aware Information Systems, operated by people and forming the so called sociotechnical systems. A malfunction of such systems seems to be a perfect field to apply

Systemic Approach in order to design and implement successful interventions. Concepts like systems hierarchy, causal loops, feedback and emergence as well as various systemic methodologies can influence the PM practitioner towards understanding complex behaviors exposed by a sociotechnical system of processes.

Much more important can be the contribution of PM to the Systemic Analysis. PM can help to discover systems and their structure and to provide a reference point for comparing mental models with the reality which is the final objective of any systemic methodology.

Keywords: Process Mining, Healthcare, Systemic Approach

EA-04.02

Scientific Areas: Public Sector, Human Resource Management

The use of DCSYM and System Dynamics Systemic Methodologies in a Unit of the Hellenic Army

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EXTENDED ABSTRACT

In this study, using the Systemic Methodologies, an attempt was made to understand deeper and improve the structure and the function of a unit of the Hellenic Army. This unit is located in Athens and the main purpose of its function is to produce, manage and distribute unique geographic data in order to support the Hellenic Armed Forces and to serve the Public Sector and the citizens.

The first methodology that was applied was the Design & Control Systemic Methodology (DCSYM). It was important to detect the external environment and analyze all the departments and the interaction between them in the unit. Using the software DCSYM Case Tool it was possible to depict all the information we had about the current situation. Through this process we comprehended the structure of the unit and we inferred conclusions. The most important problem that was detected had to do with the communication between the civilian and the military personnel, due to the different educational background. So, it was proposed the creation of a new department, which would train properly the civilian personnel.

The conclusions arising from the use of DCSYM led to the creation of a dynamic model regarding the recruitment and productivity of the civilian personnel. The model was based on one of John Sterman's models and the main purpose was to inform us about the rookie hire rate so as to sustain productivity on high level. The final model and the simulation was held using the software VENSIM PLE and it was noticed that the model appeared to correspond to the reality, but further research can be made.

Keywords: Systemic Methodologies, DCSYM, System Dynamics

EA-04.03

Scientific Areas: Logistics, Operations Management

Design and implementation of an efficient Energy Management System in a Logistic Distribution Center

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EXTENDED ABSTRACT

Effective and efficient Energy Management is essential in a Warehouse Distribution Center (DC) due to limited resources, rising energy costs as well as increased environmental requirements.

Operation cost reduction is the most important driver and motivator in an industrial environment. Moreover, it is necessary to have an extensive Energy Management System in order to fulfill legal requirements and other relevant stakeholders, good image, customer relationship and social responsibility.

The success of the energy management procedures depends on how well somebody control his facilities, how quickly he responds to unexpected challenges to communications problems. The challenges through the design phase and the implementation phase of an energy management system are complexity and transparency of the system, technical understanding for energy optimization of processes and facilities, organizational knowledge for improvement of energy relevant processes in the warehouse center, involvement of all employees and are aware of efficient energy measures as well as identification of energy potential, derivation and prioritization of energy measures.

Using the DCSYM and the VSM tools we will analyze the current situation of the energy situation in the Warehouse Center, we will show the communication flow between the Energy department and the other departments in the Warehouse. Moreover, it will be designed the communication channel between the Energy department and external suppliers, sub-contractors as well as external partners. Following the results of the DCSYM Methodology help us to design the Energy Management System.

On the other hand with the Viable System Model of Stafford Beer we will design a model which will help us to understand the organization of the energy department and find processes for problem solving solutions and decisions. During the structure phase of a process oriented Energy Management System it is necessary to describe the three types of processes (leading processes, core processes and support processes). Using the Viable System Model of Stafford Beer we will design and implement leading, core and support processes. We will design an organization structure and a role model for tasks, competence and responsibility. Furthermore, we will define a energy policy which will include

responsibility, long-term decisions for new energy investments, perspectives for the future and continuously improvements.

The scope of Energy Performance Indicators will be defined in order to set energy figures and it will be necessary to take into consideration influence factors of the Distribution Center. Using the VSM model it will be identified the potential of optimization as well as the energy measures.

To sum up, in order to adapt an efficient energy management system in a dynamic environment the plan process has to be carried out fast. The strategic plan process has to be based on Real-Time Information. The structure of the process has to be design in such a way that it will be not influenced by a problem. This means that the process has a start and an end every time we try to run through it. It has to be guaranteed that every step of the process can be used flexible indepent of a problem.

Keywords: Warehouse DC, EM System, DCSYM, VSM

EA-04.04

Scientific Areas: Project Management, Finance

The use of DCSYM Systemic methodology for the re-organization of a project management and investment organization

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EXTENDED ABSTRACT

The present paper discusses the systemic organizational study and analysis in a project management and investment company in order to create a research base for further re-organization. Next, we try to present a design of the departments and individuals of the organization as well as the communications between them. For this reason we shall use the DCSYM systemic methodology.

Initially, we present an overview of the company and its activities, followed by the organizational flow chart. After that, we design with the DCSYM the current situation of the system in order to depict organizational problems of the company. For this study we use the DCSYM case tool. The first stage of the depiction is completed with the apposition of the system table and the table of communications.

Based on the above display, we manage to locate visually the problematic situation which gives us the opportunity to suggesting some possible improvements for the initial problems. Then, the remade depiction of the system is implemented with the addition of the above proposed improvements.

The final stage of this presentation is the comparison between the initial depiction of the system and the remade depiction of it. It is now obvious that the changes are necessary and at this point we can see what the future situation of the system would be. Concluding, we give some thoughts on the choice of methodology and on why it is the most suitable for this analysis.

Keywords: DCSYM, Project management, Investment company

EA-05.01

Scientific Areas: Organizational Development & Performance Management,
Project Management

Systemic Approaches to Strategic Planning for Optimization of the Organizational Structure and for Goals' Achievement of BASF Hellas SA.

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EXTENDED ABSTRACT

This thesis aims to present Systemic Strategic Planning approaches regarding the optimization of the organizational structure and the goals' achievement of BASF Hellas SA.

The German BASF Group operates through a subsidiary in Greece in most sectors of the chemical industry. The business unit of the company that will be studied is the Crop Protection Products and the Products of the Professional & Specialty Solutions, where BASF is the leader in the Greek market increasing gradually its turnover. This fact raises questions like, how BASF will manage to maintain its leading position and what changes or improvements should be made to achieve its ambitious goals.

In today's competitive environment, characterized by growing complexity, and under unfavorable conditions in the recent years, it's vital for a business in order to survive and be able to grow, to adapt its structure and its strategy and to align with the dynamic changes of the conditions and the needs of the market. It is, therefore, important to select a different, holistic approach that will lead to addressing the complexity and will allow the observer / researcher to distinguish the roots of a problem behind the symptoms in order to highlight the fundamental solutions. This approach is the Systemic Analysis which consists of useful diagnostic tools and tools for planning and analysis.

First step is to conduct the reassessment of the Strategic Planning and the company's objectives, followed by the analysis of its structure using the Design and Control Systemic Methodology (DCSYM), which is applied to visually describe the status quo in the most simple and understandable way. Then the Viable Systems Model (VSM) is used to assess the viability of the company in the proposed improved situation. VSM provides valuable insight into whether it has the appropriate set of administrative functions and interdependencies between them, as designated by the respective theory.

The analysis highlights and proposes the improvements to be applied to the company. These include a new position for a Systemic Analyst, who will provide specialized support in planning, coordinating and controlling processes and

procedures, ensuring completeness in the data collection, the data processing and the data analysis. This will lead to a better allocation of resources and will increase efficiency in the functioning of the company. Another proposed improvement is the proper redesign and relaunch of the Customer Relationship Management system (CRM), which will be adapted to the needs and requirements of the organization, so that it provides excellent information and diffusion of knowledge at all levels of the organization regarding the business environment of the company.

In conclusion, this thesis, based on the proposals of solving the structural problems that the company is facing, aspires to improve its management and operation, to develop and upgrade its internal processes and its effectiveness. So, BASF will manage to defend its leading market position and to respond successfully to the dynamic market requirements, in order to obtain its viability.

Keywords: Systemic Methodologies, Systems Thinking, System Dynamics, BASF Hellas SA, Systemic Analyst

EA-05.02

Scientific Areas: Entrepreneurship, Project Management

Systemic Approaches of the Strategic Design implemented in the set up and positioning of the X Ltd Import Company in the Greek market.

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EXTENDED ABSTRACT

X Ltd is an import company that focuses on the area of Health Care and specialises in Importing pharmaceuticals/cosmetics products and Organising Medical Conferences for Practitioners and Business Executives. At this early stage of its foundation, the Company consists of two departments that are functioning under the supervision of the General Manager: The department of Marketing and that of Operations and the Sales.

The problems that have been identified have several different dimensions. For starters, there is misplaced communication between the State (through the National Organization of Medicine-EOF-) and the Company regarding the rules and regulations that govern the medicines import trade. There have already been delays in delivering certain projects as well as withdrawal of specific actions, due to misdirected communication.

Secondly, due to the debt crisis that plagues Greece the last several years, foreign suppliers are reluctant to cooperate with newly created companies for fear that these companies might have limited financial sources. Even when some of them decide to do so, they ask the companies to buy the products upfront by depositing the whole amount of money in a Bank abroad before the arrival of the products in Greece. That, by definition, creates a huge credit crunch problem within the businesses which is very difficult for them to tackle at this point of time.

For this reason, the central idea of this thesis on Systemic Entrepreneurship is to apply, through Design and Control Systemic Methodology (DCSYM), Viable Systems Model (VSM) as well as other systemic tools such as VENSIM, a systemic approach in order to ensure an efficient start up for the business and identify all processes required to ensure the company's capability to consistently meet customer and project requirements.

The extended use of the systemic methodologies has presented the author with useful insight for the structuring of the X Ltd Company: SWOT analysis of the sector, job allocation according to each employee's skills and capabilities, quality effort along with customer oriented marketing and lastly the use of the Business Model Canvas (BMC) which will depict and assess the profitability of the new

business, are more than enough to ensure an efficient groundwork for the new Entrepreneur in launching the new company.

In addition, the Triple Constraint model will be used in order to illustrate that success in the startup of the business-as a project- is measured by the project team's ability to manage the project so that the expected results are produced while managing time and cost.

To conclude, a report with SMART objectives will be presented as well as arguments about the need to enhance the customer base and the satisfaction of all interested parties.

Keywords: DCSYM, Systemic Approach, Communication, Systemic Entrepreneurship, VENSIM, SWOT

EA-05.03

Scientific Areas: E-business Solutions,

The use of VIPROCE Systemic Multi-Methodology to a Multinational Industry: A real e-Governance model

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In the time of crisis and uncertainty the basic philosophy of enterprise's management is to prepare a strategy for a shorter period and to modify this strategy based on changes in market conditions, i.e. to prepare a flexible model and to deploy a strategy of a fast and dynamic change. Enterprises and especially multinational industries need to create and gain out of opportunities deriving from the crisis and to adjust to the new environment.

The systemic methodologies concentrate on the human factor that is evolving in those systems and they constitute a very valuable tool helping us to understand and define the system functions. Thus the model's usability and agility is improved, having a reduced abstraction level and giving the business high and realizable functionality. The proposed approach combines VIPROCE Systemic methodology along with the use of Microsoft's Dynamics CRM, providing this way a scientific and productive tool in order to detect and solve and organize organizational problems.

The multinational Industry' vision is to continue to be the world's leading coatings and specialty products company. Through leadership in innovation, sustainability and color, the company helps customers in industrial, transportation, consumer products, and construction markets and aftermarkets to enhance more surfaces in more ways than does any other company. Founded over a decade ago, the company has global headquarters in US and operates in nearly 70 countries around the world.

The company, is specializing in all aspects of coatings. Due to its worldwide operations and there was the need for a Systemic analysis of how to governance and manage all daily complexity with the use of commercial tools. Focus of this paper is to provide a comprehensive definition of the industry's' business process reengineering using systemic methodologies and tools, such as use of VIPROCE multi-methodology and Microsoft Dynamics CRM online software. Aim of this approach is to create an enterprise strategy flexible in terms of business and stable in terms of production, leading to success in dynamically changing conditions and concentrate onto customer's needs.

Keywords: Systemic Methodologies, VIPROCE, CRM Online

EA-05.04

Scientific Areas: Organizational Behaviour, Finance

Systemic methodologies and defined benefit pension schemes

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EXTENDED ABSTRACT

1. The use of defined benefit pension schemes as post-employment benefits in employment relations creates a particular risk for the employer namely pension financial risk.
2. As a finance problem, on the employer's point of view, pension financial risk is associated with the uncertainty of how much to fund the pension scheme and how to invest.
3. Risk factors (ordinary risks) create financial dynamic complexity through their multiple interactions.
4. Real case study: employment contract that includes a defined benefit plan:
 - ♣ The employment contract included a post-employment benefit plan accrued at the termination date of employment.
 - ♣ The termination date of employment depends both on the current and the past service period.
 - ♣ The employer made a curtailment in the defined benefit plan by substituting the previous plan with a defined contribution plan.
 - ♣ The employer suppressed critical information about the employee's past service and assumed, deliberately, that the past service had no impact on the termination date hence the defined benefit obligation.
 - ♣ Consequently, on the employer's point of view, past service was irrelevant to the defined benefit obligation of the pension scheme – which was not in compliance with the Greek Social Security law and the IAS/IFRS standards.
 - ♣ According to the Greek Social Security law, the termination date for the employees with "διαδοχική ασφάλιση" (that have been insured in more

than one state pension fund) depends on all the employment period (current and past) irrespective of the nature of employment.

♣ Particular clause in the successive pension plan made clear that the employer remains responsible for the actuarial deficit due to curtailments and past service cost.

5. Changes in the IAS/IFRS standards (IFRIC 14, IAS 19 and IFRS 13) necessitated the actuarial re-measurements for the defined benefit pension schemes (either of legal or constructive obligations).

6. Actuarial re-measurements revealed the off-balance-sheet pension liabilities in the form of actuarial deficit in the employer's consolidated financial statements.

7. Contrary to what was wrongly believed to be known, the employee's past service cost revealed the employer's pension liability which was deducted from the equity funds and had an impact in financial leverage.

8. Hence, changes to the IAS 19 revealed conflicts between the local legislation and the employer's employment policies.

9. Moreover, the use of systemic methodologies (SSM and VSM Beer) made clear the root causes of the pension financial risk.

10. The use of the systemic methodologies along with the accounting and finance practices create early warning signals in the management practice of strategic planning regarding principal risks.

Keywords: Uncertainty, principal risk, DBPS, systemic methodologies

EA-06.01

Scientific Areas: Healthcare Management,

A Systems approach to understanding the dynamics of bullying: A student's perspective.

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EXTENDED ABSTRACT

Bullying in our society has reached epidemic proportions. Cyberbullying has been added to the many facets of this phenomena in our technologically driven society. The consequences of bullying have been either ignored or discounted for many years. The recent attention gained through the publicity of actual cases that have led to tragic consequences has raised public awareness, but efforts to arrest the underlying causes of the problem remain elusive.

Bullying may be defined as the act of one person (or persons) threatening/gossiping or physically assaulting another person, for no apparent reason. Cyberbullying occurs when someone uses technology to send malicious, threatening, or embarrassing messages to or about another person. Bullying is a major cause of stress that can leave anyone feeling hurt, angry, frightened and depressed, that can have a negative impact on the mental and even physical health of the participants.

Most traditional approaches to understand the issues associated with bullying, lack the sophistication to effectively address the dynamic complexity inherent with the phenomena, relying on simplification rather than holistic treatment of complexity. They tend to embrace a single perspective (worldview) and direct attention to the symptoms rather than the underlying structures, which are responsible for the manifestation of the symptoms in the first place. Hence, bullying is often treated as a static event and addressed within strict contextual boundaries, ignoring complex networks of time delayed feedback mechanisms that vary in strength and direction, and non-linear relationships between the intervention and the resulting consequences.

This work will address the pattern of behavior that lead to bullying from a systems perspective in order to gain a clear insight relative to the underlying system structure from which this phenomena emerge. The various patterns can be approached from a variety of viewpoints that are dependent on the pluralistic differences in people's perception of reality, the varied believes, attitudes and values which drive their complex motivations, and issues associated with culture, politics and power structures: i.e. society in general or more specifically family, workplace, teachers, students, etc. The primary objective of this work is to develop a framework using System Dynamics, to model the dynamic behavior of bullying from the view point of a student.

System Dynamics is a methodology and mathematical modeling technique that has been successfully used to understand the dynamic behavior of complex systems. It uses information feedback and time delays that affect the behavior of a system as a means of evaluating issues within diverse contexts. A System dynamics approach places emphasis on structure and the processes within that structure which are responsible for the system's dynamic behavior.

It provides a framework for effectively dealing with dynamic complexity, where cause and effect are not obviously related. Therefore, a set of archetypes are applied in order to understand the reasons for which this behavior occurs and recurs over time and to test whether measures typically applied in order to prevent bullying are efficient and successful. In addition, the archetypes help clarify why measures taken do not always result in the desired behavior, and how independent decisions in different parts of society can combine to impact bullying.

Keywords: Bulling, Systems approach, System Dynamics, Archetypes

EA-06.02

Scientific Areas: Healthcare Management,

A Systemic Approach to Healthcare Management of Immigrants in Eastern Macedonia and Thrace

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EXTENDED ABSTRACT

The number of immigrants entering the European Union countries the latest years have increased (Vasileva, 2012). Greece is one of the EU countries that accepts a lot of the immigrants. As a consequence their pressure to the Greek National Health Service (NHS) system has also increased and there is a need to adapt it to the new era (Kotsioni and Hatziprokopiou, 2009).

The main goal of the present research is to offer a systematic approach to the healthcare management of immigrants in the region of Eastern Macedonia and Thrace (EMT). The data were collected between years 2005 and 2011 from five different hospitals belonging to the Greek NHS system, covering the whole EMT region. Four characteristics were analyzed, namely the duration of hospitalization, the diagnosis, the cost of hospitalization and the nationality, using statistical data mining methods (Field et al, 2012).

14.043 immigrants and 532.548 Greek nationality patients accessed the NHS system between 2005 and 2011 at the region of EMT. Most of the immigrants were from Albania followed by the ones from Bulgaria, Georgia, Russia, Germany and others. The total cost of the health services applied to immigrants was 6.983.309,00 Euro and 240.797.634,00 Euro to the Greek patients. The mean highest cost was observed at 2007 and was 664,43 Euro for the immigrants and 507,73 for Greek patients. Most (21,4%) of the immigrants were hospitalized for one day and 18,4% for two days. On the other hand, 31,8% of the Greek patients were hospitalized for one day and 19,7% for two days. Overall 78.6% of the immigrants and 81,4% of the Greek patients were hospitalized up to 5 days.

The management of the health services for immigrants could benefit from reforms in four areas of the NHS system: (i) reviewing the excessively fragmented structure of the health care system and its governance; (ii) modernizing hospital administration; (iii) providing culturally and linguistically appropriate services; and (iv) further tightening control over pharmaceutical expenditure. The above mentioned reforms could also improve the NHS system for Greek patients.

Keywords: IMMIGRANTS, HEALTHCARE SYSTEM, MANAGEMENT, SYSTEMIC APPROACH

EA-06.03

Scientific Areas: Healthcare Management,

A systems approach to controlling Supply Chain of Pharmaceutical Products: A journey to the last mile

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EXTENDED ABSTRACT

The distribution of medicinal products is an important activity in integrated supply chain management. Today's distribution network for medicinal products is increasingly complex and involves many players. Regulatory agencies world-wide lay down appropriate guidelines, which are tools assisting all players in the supply chain in conducting their activities to ensure control of the distribution chain and consequently maintain the quality of medicinal products.

Pharmaceutical companies are required to observe global requirements to meet during all parts of supply chain, i.e during the storage, transport and handling of time and temperature sensitive products. Changing product portfolios, requirements for good storage and distribution practices, regulatory expectations, quality management, and risk assessment factors bring many challenges to pharmaceutical cold chain management.

The purpose of this work is to provide a systems approach of all key factors of the pharmaceutical cold chain process, that have a critical impact to operational activities and oversight from product manufacture (or arrival in a country) to the product's administration to the patient.

This is done by examining the areas involved in the supply, packaging, and distribution from arrival of the pharmaceutical products to the country, to the last mile, focusing on cold chain management required by product such as vaccines or bio-pharmaceutical products.

Regulatory agencies world-wide are requiring the pharmaceutical industry to identify, assess, treat and manage the potential quality risks associated with pharma and bio-pharma products.

Pharmaceutical firms are also realizing that risk management is an important way to rationally set priorities for quality and compliance activities. Quality Risk Management gives the opportunity to develop knowledge and skills enabling the company to critically evaluate a pharmaceutical system and propose improvement actions. Understanding the fundamental systemic relationships which affect the behavior of the system over time augments the company's capacity to manage the system's complexity.

A course named "Pharmaceutical Cold Chain Management on Wheels (PCCMoW)" was organized in Greece by WHO on 4-9 May, 2015. This event has given to

participants the opportunity to visit, as they physically travel with mentors by bus, a variety of storage, distribution, and health care facilities in southern Greece. It was a learning experience with practical application of teamwork showed how the theoretical background of pharmaceutical cold chain management is applied in the length of the cold chain.

From the pharmaceutical company perspective there is an emerging need to integrate all company's processes, assets, culture and politics, employee required and emergent systems, with existing and potential customers' needs, suppliers' capacities, competitors' capabilities, and governmental agencies' requirements as essential elements into one unified system.

Keywords: Supply Chain; Systems Approach; Storage and Distribution; Strategic Management; Quality Risk Management

EA-06.04

Scientific Areas: Education & Learning, Healthcare Management

Abstract of Best-Buddies program of the University of Ioannina

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EXTENDED ABSTRACT

This project was created to show Systemic Approaches for the management of Best-Buddies program of the University of Ioannina in order to promote social transactions between children with special needs.

The University began this program in 2008 and it is presently operating. Its main concern is to address a problem of social pathogenesis regarding the vulnerable groups of children with special needs. The main reason for the creation of the program was the large number of cases addressed to the university because there were no other public services which could be addressed to.

The incidents that were recorded were mainly children with autism, Down syndrome, mental retardation, Asperger syndrome and rarely, some adult cases. Because of this plethora of incidents, Professor mr.Stasinos , department of Psychology at the University of Ioannina took the initiative to create a program to tackle this phenomenon which would be non-profit and addressed to families who do not afford to go to private services.

Regarding the university, the program would be run by volunteers consisted by both students and teachers. Motivation would firstly be the contribution in such an important project and furthermore the implementation of all the theoretical knowledge acquired on real cases.

In the end, the teachers who were involved were two: the creator of the program, professor mr. Stasinos and professor mrs.Ziori, professor of Evolutionary Psychology. Interest from students' side, was quite big too. Students were divided in groups of four people with their supervisors and teachers and undertook one (in some cases maybe two, if people were in the same family) cases.

The basic tool for the proper function of the program and its progress is primarily the proper collection of data in relation to the diagnosis, the reporting of incidents and finally the integration of the children in the program, which I personally hope to be the main results of the project.

The Systemic analysis, the use of tools and methodologies offered by Systemic sector is a way of resolving such problematic situations.

The aim is to document the innovations and the exemplary sides through its application in real situations so that the project will be endorsed by the university and be implemented. The cooperation of the parents and their report to the appropriate services is necessary.

Proper recording of incidents and thus the acceptance of participation in the program, create the proper conditions for its operation and progress. Thus, the right information on the program and the registration of incidents by categories, create excellent conditions for the promotion of social interaction of these children.

In the difficult situations we faced, we implemented systemic tools and methodologies to deal with the crises of the system. However, because this project was created with the form of a proposal, crises in the system were not real.

In this paper the following systemic methodologies are applied:

- Design and Control Systemic Methodology (DCSYM)
- Total Systems Intervention (TSI)
- Soft Systems Methodology (SSM)
- Interactive Planning (IP)
- System Dynamics - Software Vensim

Keywords: children, special, needs, systemic, analysis, ioannina

EA-07.01

Scientific Areas: Creativity & Innovation, E-business Solutions

E-Services Development in the Collaborative World

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EXTENDED ABSTRACT

The rise of globe-spanning, service-based business models has transformed the way the world works. This transformation has been enabled by new information and communications technologies, specialization of businesses, global regulations, and increased use of external services by entities at multiple scales (Wirtz & Ehret, 2012). As enterprises try to react to these challenges, they realize that they need to transform in order to survive. The problem is that transformations are complex undertakings. Today an increasing number of enterprises are looking into the question of "What" to do in order to transform. Our research seeks to answer this contemporary problem with a Transformation Framework based on Service Science principles.

In the collaborative world the value co-creation is extremely important. Therefore our framework axes are based on Service Science principles. Using this framework we try to find how these principles can guide transformations in intelligent ways. On our framework the Service Science principles are the drivers that help us to decide the appropriate Business Transformation parameters. Enterprises need to transform in order to participate successfully in a collaborative network. Our framework can offer the appropriate channel to achieve this goal. We take the view that value is created collaboratively in interactive configurations of mutual exchange. We assume that all the enterprises inside a collaborative network are service systems, which are a configuration of resources, connected to other systems by value propositions. We argue that value is fundamentally derived and determined in use – the integration and application of resources in a specific context – rather than in exchange – embedded in firm output and captured by price.

A collaborative network first needs to have resources acquisition from partners and second all the partners inside the network, they need to collaborate in new ways in order to create new forms of value. Our business transformation framework is based on the success factors of a business network. Based on the collaborative network literature, we keep these two as key success factors for creating our business transformation framework. Our framework has two axes: The vertical axis refers to the collaborative manner between enterprises in a collaborative network (Self Service → Co-design). The value co-creation degree refers to the relationships, which are developed in a collaborative network. All the nodes in a collaborative network, including the end customer, are connected with other nodes in order to succeed their goals. Based on service system framework

value is co-created by this reciprocal and mutually beneficial relationship (Vargo et al., 2008).

The horizontal axis categorizes the performance against target, for which an enterprise participates in a collaborative network (Resources Acquisition → Resources Integration). Enterprises decide to participate in collaborative networks in order to find the resources they need to meet their targets and specifically in our case, to be able to transform. Our horizontal axis counts the degree of the performance against this key goal.

Through the creation of our business transformation framework we want to find the building blocks in order to create a connection between business transformation and service systems framework. We aim to provide a new way to succeed in a transformation because the need to transform or change in fundamental ways is a central element of the today's economy and society (Jensen, 2000; Collins, 2001; Collins & Porras, 1994).

Keywords: collaborative networks, service systems, value co-creation, value-in-use, business transformation

EA-07.02

Scientific Areas: Education & Learning, Public Sector

The use of Systemic methodologies in the Operation of a Army Headquarters: VSM of Beer, DCSYM, Vensim, Anylogic

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EXTENDED ABSTRACT

In this thesis the application of Systems Theory in Headquarters Ω with a viable system model (BEER's VSM), which consists of five systems. The aim of this study is to ensure Headquarters' customization to the external environment and maintenance of an internal stability. In a standalone form, such as the Headquarters, will need to keep score, to operate in the environment of five key processes. These are: 1) Application, 2) Coordination, 3) Control, 4) Intelligence, 5) Policy. The Headquarters will be also described with DCSYM methodology (Design and Control Systemic Methodology), which is based on the principles of PSM (Problem of pricing Methodology).

Additionally, in the context of this study the use of additional Systemic Methodologies in the operation of the Headquarters is studied, analyzing the dynamics simulation with Vensim and Anylogic. Finally, proposals are made for applying Systemic Methodologies in the operations of Army's units.

Keywords: Systemic Methodologies, Army, VSM, DCSYM, Vensim, Anylogic

EA-07.03

Scientific Areas: Procedural Systems, Project Management

Restructuring a contemporary retail sales system using DCSYM Systemic Methodology

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EXTENDED ABSTRACT

The company was founded to create and market electronic cigarette products with main asset the high level of client service it offers along with its top line products. In an effort to further improve the aforementioned advantages and achieve optimum quality of services provided; the company performed a major restructuring of its retail sales system.

Due to the diversity of the daily issues, there is the need to create a system to help decompress the company's workload and further aid in properly "expressing" its strategic thoughts. The use of DCSYM systemic methodology allows to accurately articulate any problems while projecting an overview of said problems. This clear blueprint gives the opportunity to find the best possible solution. This paper focuses to the use of DCSYM in order to illustrate the pre-existing structure of the system, the development of the communication network, and the information flow. In addition, it showcases the interventions followed until the redesigned current status.

Keywords: electronic, cigarette, restructuring, quality, services, retail, decompress, DCSYM, development, information

EA-07.04

Scientific Areas: Organizational Behaviour, Small- & Medium-sized Enterprises

Restructuring small-medium enterprises with an emphasis on communications between departments with the use of DCSYM Systemic Methodology

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EXTENDED ABSTRACT

Restructuring small-medium enterprises with an emphasis on communications between departments with the use of DCSYM Systemic Methodology.

The company is a small-medium sized company with over twenty years of experience in providing fitness services. The main purpose of this business is best and prompt customer service. The economic crisis has affected the needs of consumers as well as the business itself. This paper examines the structure of the last two years where the company considered that it was necessary to change the style.

Specifically, the company stopped addressing a specific target group (VIP members) where services were provided at very high prices and opened to the general public. This was done by dramatically reducing the prices of subscriptions. This, in turn, caused the business to grow dramatically. Due to the rapid growth in workload and change of structure, gaps were created between departments the communications. Essentially an increased complexity was created due to the needs of the business to change in order to remain viable and handle the operation part of the business.

With the help of DCSYM methodology, gaps were imprinted and interpreted as images. The corresponding improvements were proposed for a normalization and optimization of daily business processes.

Keywords: Systemic Methodology, increased complexity, remain viable

EA-08.01

Scientific Areas: Strategic Management, Information Systems

Does COBIT 5 constitute a new Business Excellence Model?

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EXTENDED ABSTRACT

Over the past years organizations have shown an increasing focus on evaluating their business performance by deploying Business Excellence concepts and frameworks. Business Excellence Models are frameworks applied within an organization in order to help to focus thought and action in a more systematic and structured way that should lead to increased performance. These models are holistic focusing upon all areas and dimensions of an organization. They are internationally recognized as both providing a framework to assist the adoption of business excellence principles, and an effective way of measuring how thoroughly this adoption has been incorporated.

There are various Business Excellence Models developed worldwide, with the most known to be the Malcolm Baldrige Award Model and the European Business Excellence Model. These models are based on some fundamental concepts which are integrated to the whole model. Each model contain a number of criteria: enablers (what an organization does and how) and results (what an organization achieves). The performance evaluation is based on the logic that organizations first set the required results for each enabler, and then plan and develop the approaches in a systematic and integrated way. They deploy these approaches in a systematic and integrated way and finally they assess and refine the approaches and their deployment as well.

COBIT 5 is a systemic framework developed in order to assist organizations in achieving their objectives for the governance and management of Information Systems. It aims at helping organizations creating optimal value from the use of Information Systems maintaining a balance between realizing benefits and optimizing risk levels and resource use. COBIT 5 enables Information Systems to be managed in a holistic manner for the entire organization.

This study aims to examine whether the COBIT 5 Framework can be used as a business excellence model. The main principles of COBIT 5 are presented and compared with the respective principles of well-known Business Excellence Models. Subsequently, the COBIT 5 Model's structure is analyzed and compared with the respective model structure of the aforementioned models. Finally, a comparison of the metrics used for the performance evaluation used by each model is presented.

Keywords: COBIT 5, Business Excellence, Performance Evaluation

EA-08.02

Scientific Areas: Organizational Development & Performance Management,
Sociocultural Impact

Use of Systemic Methodologies for creating and deploying an innovative pilot project: Voluntary Citizenry Action (VCA)

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EXTENDED ABSTRACT

Greece's economic crisis has brought to the surface various social issues in many regions in the country. The lifestyle is constantly transforming but the changes are not yet solid. Social systems are in a dynamic balance due to the massive information flow which, however, is not possible to be confirmed. This challenging situation is a major obstacle for the society, as it restrains it from evolving, and people living in the country seem to have lost all hope.

The situation described above has triggered a need to present innovative and viable solutions that have never been suggested before worldwide, so as to successfully deal with the aforementioned problems. It took a couple of years to examine a local community as a system, in order to study and try to perform an in-depth examination of the dying system, thus learning all the details that are necessary for the creation of a functional plan that would help to cope with the resistance to change.

This is the most challenging project our team has been involved in and it constitutes an interesting study of the power of the systemic tools for humans' benefits in a society.

The presentation will try to brief the most important projects of the whole program, whose main and most important topics are:

- System analysis
- Game Theory and alternatives
- Program management setup
- DCSYM of the VCA system
- Viability model
- Evaluation model
- Implementation issues and solutions

Keywords: Systemic Methodologies, innovative, social, pilot, project, volunteer.

EA-08.03

Scientific Areas: Environmental Systems, Research in Energy - energiaproject

Use of Systemic Methodologies for the Research & Development of innovative technology in Implementation of electric fields in water

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EXTENDED ABSTRACT

Energiaproject is presented a Systemic approach of the implications of electric fields in water and how market is looking at it. This research is still going and this is the first official presentation on this level. The system has been studied from Agricultural University of Athens too. HILTON Hotel Athens has been using this as Coca Cola. CORE MARINE-MAJESTY ship is another happy customer with this innovation. There are indications that can be used in Medical science too, but it needs the right connections to initiate the adequate procedure so it can be approved later on.

Use of water in modern times has been headache for many equipment which have been so delicate and ease brake. Furthermore the man effect in nature has affected water too. The quality of water is a certain criteria for use in human life, and the cost of maintaining this quality is high enough many times and the cost is not only in money but in time too.

In HILTON Hotel in Athens they had to spend thousands of liters in water to clean their water system from salts that affected the quality and the usage of the water in general. We all know that salts in the pipes affects the warm up time of the water and leads in breakdown of the heater eventually.

Our research found out that apparent from the usual know chemical water "salt cleaning" there is one more effective way of doing this using electric fields with a certain shape. The amazing results are not only that clears out the water pipes but it seems that this water help certain people that easily form kidney stones and it seems that it is very helpful for them.

The system is an innovative technology that is in the market and there are many installations that make study more circumstantial.

The whole picture will be traced with the use of the DCSYM platform, which is a systemic methodology with powerful mathematical and semantic infrastructure, sufficient for the effective guidance of dialectical processes of designing (multi agent) which concern structures, processes and interferences.

The project is structured in the following way:

- System analysis
- Installations and proves
- Modeling and use of DCSYM as a problem solving tool
- Monitoring sustainability using Beer's method
- Suggested improvements
- Benefits of study

Keywords: Systemic Methodologies, energiaproject, electric fields, water, innovation

EA-08.04

Scientific Areas: Public Sector, sustainability

Island Health System facing the insularity

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EXTENDED ABSTRACT

The Insularity is an endogenous phenomenon and enters the development course after having shaped the terms of attractiveness and experiential identity of each island. It is also area (spatial parameter) and if defined by the distance, then it is valued by the terms of geographical discontinuity and time of distance catching.

Health is defined of prevention procedures, diagnosis and treatment. But Health is also a component module and living level and reported on living conditions. The spatial discontinuity and discontinuity coverage time are the factors that play a critical role during a major medical emergency. And it is these factors that increase the risk when choosing to install on an island. In different cases, the particular experiential identity of the island contains the risk endogenously. The medical emergency and she is the parameter that dramatizes the effects of insularity.

Shortages in infrastructure, equipment and even the inadequate staffing of health units characterize the health sector of island country. Infrastructure is burden during the summer period as the majority of the islands have turned to tourism development, unilaterally.

For the field study, the island of Aegina is 12 nautical miles away from the metropolitan port of Piraeus, distance covered by boat over 1 hour and 20 minutes at the latest. Proximity to infrastructure of the capital, counts down during the emergency medical event.

By using SYSTEMIC methodologies, the issue of insularity in relation to the health infrastructure of the island and the relation between health and insularity and their contribution to the development course of the island are considered.

Keywords: health care, systems thinking, DSCYM, insularity.

EA-09.01

Scientific Areas: Sociocultural Impact, Knowledge Management

Orange economy as a systems approach study

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EXTENDED ABSTRACT

The purpose of this study is to demonstrate the importance of "Creative Industry" for the Economic Development and Social Network by analyzing the way to move from the Knowledge Economy to Creative Economy.

Based on previous research data, the main purpose is to recording relevant data for Greece in order to benefit greatly in the coming years by the sectors that make up the Creative Economy(Orange Economy).

The Orange Economy includes the Intellectual Property, Cultural Heritage, Tourism and the opportunities that emerge through the Arts, Media and Creative Services(advertising, architecture, crafts, design, fashion, cinema, games and toys, music, publishing, software, television, radio, video, mobile telephone, video, visual arts and performing arts).

The contribution of the above areas of the Orange Economy accounts for 6.1% of the global economy. The economic contribution of the Orange Economy is a recent phenomenon.

These economic data and forecasts reflect the important aspect of the Orange Economy and particularly in countries where the economies are in recession or seek for further opportunities to cope with the international competition.

Keywords: Orange economy, Systems approach, Culture, Knowledge economy

EA-09.02

Scientific Areas: Healthcare Management,

The use of DCSYM Systemic Methodology for the re-organization of a Hospital's Department

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EXTENDED ABSTRACT

In this paper we present a systemic study in the Child Psychiatry Clinic of the Children's Hospital "Agia Sophia". We depict the quality interactions between these entities, such as the communication channel and introduce the concept of control. The display is made by using the DCSYM Systemic Methodology, which is commonly used for studying systems in which the human factor is dominant.

Initially, we introduce the symbols of DCSYM Systemic Methodology and display the structure of the systems. Following it, we represent the communication channels and the control between these systems. Furthermore, we include a summary table, which contains the systems that we have designed, their subsystems and the people that belong to those systems. Thus, we illustrate the Current Situation (CS), using the DCSYM, which facilitates the recognition of the key -points, in which an intervention is needed, in order to improve the structure and operation of the system's CS. Consequently, we have the ability to make Ameliorative Suggestions (AS), which are, also, represented by DCSYM. As a result, we are able to compare the CS with the AS and redefine the system in order to make it more responsive to the real needs.

This analysis, also, shows as the "strength" of the DCSYM Systemic Methodology by its ability to visualize the structure and the operation of a system.

Keywords: DCSYM, systemic study, Child Psychiatry Clinic

EA-09.03

Scientific Areas: Procedural Systems, Strategic Management

The use of DCSYM Systemic Methodology in the AndGate Technologies Company

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EXTENDED ABSTRACT

This paper deals with System Structuring in Strategic level with the Design and Control Systemic Methodology DCSYM. DCSYM fulfills the basic objective of systemic analysis which is the detection of behaviors and properties that systems have as a whole. The company, on which the project is based on, is Andgate Technologies, an offshore development firm that provides optimal technical solution in the field of Information.

We analyze the structure and the operations of the company so as to examine the communication and interaction between its elements. After the graphical representation, using the DCSYM methodology, it is observed that there is distorted communication between some departments of the company. In order to improve this problem we proceed to redefine the company's assets, staff roles and structure of communication networks. The new structure of the company, as evidenced by the implementation of the proposed improvements, is now redesigned with the DCSYM case tool. As a result it turns up a modified organization chart, with additions such as an expert solution manager and company representatives.

Finally, we compare the old and the new structure of the company and we wrap up our study with findings and conclusions from the use of the DCSYM case tool.

Keywords: DCSYM, systemic methodology, Andgate

EA-09.04

Scientific Areas: Business Process Modelling, Project Management

The use of DCSYM Systemic Methodology for the organization of the SEIKO ophthalmic lenses branch in Greece

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EXTENDED ABSTRACT

This project began as an attempt to understand the communications between sub systems and individuals parts of the SEIKO ophthalmic lenses branch in Greece. We displayed the quality interactions between entities, indicated communication channels and introduced the concept of control.

During the first step of the project we examined the way the aforementioned systems coexist, cooperate and interact. This was achieved by representing the Current Situation of the company with the DCSYM Methodology. The findings lead to an in-depth comprehension of the individuals that take place in the organization, and the standing situation of the operations. These systems are dominated by the human factor and the DCSYM outcome showed obscure communications and unnecessary parts in the production line.

The next step was to remove unneeded segments and keep only the bare essential ones, thus creating a new DCSYM illustration, the Suggested Outcome. This took a few meetings to coordinate with the needs of the CEO of the company but two outcomes were reached that satisfied the project's demands. The project was finished by evaluating the DCSYM case tool and the changes made to the firm.

Keywords: DCSYM, Systemic study, SEIKO, Ophthalmic lenses

EA-10.01

Scientific Areas: Healthcare Management, Systemic Methodologies for Health Care

CYTOTOXIC ACTION OF VANADIUM COMPLEXES AGAINST CANCER AND NORMAL FIBROBLAST CELL LINES

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EXTENDED ABSTRACT

We investigated the possible cytotoxic effects of vanadium complexes d-toc-dieth V (V) complex and d-toc-dipyr V (IV) complex and their respective ligands (d-toc-dieth ligand and d-toc-dipyr ligand) in vitro, against the human osteosarcoma cell line U2OS, Wistar rat leiomyosarcoma cell line LMS and the human normal embryonic fibroblasts MRC-5. The anticancer properties of vanadium compounds and complexes are known and published.

Cells were cultured in Dulbecco's modified Eagle's medium (DMEM), supplemented with 10% (v/v) foetal calf serum (FCS), 2 mM L-glutamine, 100 units/ml penicillin and 100 µg/ml streptomycin at 37°C in a 5% CO₂ and 95% air atmosphere humidified incubator. For the assessment of cell growth we used the MTT assay (3-(4,5-dimethylthiazol-2-yl) 2,5-diphenyltetrazolium bromide assay). MTT, a yellow tetrazole, is reduced to purple formazan in living cells. Cells were seeded on 96-well plates (5000 per well), left for 24 hours for growing and were exposed to different concentrations of the complexes and the ligands. After the addition of the complexes and the ligands the cells were incubated for 48h. In each well, 50 µl of 3mg/ml MTT were added, the cells were incubated for 3 h, the medium was removed and 200 µl dimethyl sulfoxide (DMSO) were added to each well to solubilise the formazan precipitate. Absorbance was measured at 540 nm and 690 nm (background absorbance) using a microplate spectrophotometer (thermos scientific).

Preliminary results indicated that both complexes showed dose dependent cytotoxic action. The d-toc-dieth V (V) complex had more obvious cytotoxic action against U2OS cell line than the d-toc-dipyr V (IV) complex. Moreover, the two complexes (d-toc-dieth V (V) complex and d-toc-dipyr V (IV) complex) had similar cytotoxic action against LMS cell line. The d-toc-dipyr ligand did not have significant cytotoxic action against both U2OS and LMS cell lines whereas the d-toc-dieth ligand had significant cytotoxic action against both cell lines (U2OS and LMS). Furthermore, both complexes had similar cytotoxic action in MRC-5 cell line. The d-toc-dieth ligand had cytotoxic action in MRC-5 cell line whereas the d-toc-dipyr ligand did not have significant cytotoxic effect in MRC-5 cell line. The present results showed that the d-toc-dipyr V (IV) complex, vanadium (IV) is the

cytotoxic compound and not the respective ligand. Therefore with the appropriate ligand normal cells are not affected.

In conclusion vanadium complexes could be used in the future in anticancer treatment.

Keywords: vanadium, complex, osteosarcoma, leiomyosarcoma, cytotoxicity

EA-10.02

Scientific Areas: Healthcare Management, Systemic Methodologies for Health Care

METAL RELATED ANTI-HYPERTENSIVE FACTORS AND METALS MAY MODIFY PLASMA LIPID LEVELS IN RATS

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EXTENDED ABSTRACT

Essential trace elements as well as toxic metals may alter serum lipids levels and modify the action of antihypertensive agents metabolically related to certain metals.

Aim of the present study was to identify the possible effects of metals and pharmaceutical anti-hypertensive factors, on the levels of serum lipids in rats, received via food intake. Thirty three (33) female Wistar rats, five (5) weeks old and weighting (130 ± 20 gr) were housed for 43 days in and fed with food prepared in the laboratory of Physiology, designed, as follows: control rat group: Zinc (Zn) 30 mg/kg, Copper (Cu) 7 mg/kg, Zn deficient rat group: 0.7 mg/kg, Zn x 10 rat group: 300mgZn/kg, Cu x 10 rat group: 70 mg Cu/kg, Lead (Pb) x 10 rat group: 5 mg Pb/kg, Cadmium (Cd) x 10 rat group: 1mgCd/kg. Calcium (Ca) antagonistsA rat group: 1.09 mg/kg, Angiotensin Converting Enzyme (ACE) inhibitorsA rat group: 0.52 mg/kg.

Our results demonstrated that, Zn deficiency as well as over-intake (x 10) of Zn and Cu increased the levels of plasma Total Cholesterol (CL), Low Density Lipoprotein (LDL) and High Density Lipoprotein (HDL). Cd and Pb over intake (x10) resulted in plasma HDL and CL increase. Pb over intake was accompanied by a significant LDL increase whereas Cd over- intake had not a similar effect. Anti-hypertensive treatment did not affect plasma CL levels but it increased plasma HDL levels. Ca antagonist decreased plasma LDL levels and improved HDL/LDL ratio while ACE inhibitor increased plasma LDL levels.

It is concluded that essential and toxic metals as food additives or contaminants may modify anti-lipidemic and anti-hypertensive treatments and it is suggested that certain metals such as Zn, Cu, Pb and Cd should be taken into account in serum lipids estimation.

Keywords: Serum lipids, zinc, copper, lead, cadmium, anti-hypertensive factors



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