The Need, Requirements, and Vision for E-Societal Management

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INTRODUCTION

The present article follows a previously one published in the second edition of the IST Encyclopedia, see Costake (2009). It considers. (i) the deteriorating global environment; (ii) the: still active global financial and socio-economic crisis (recognized in the exponential rise of the US government's debt and issues of the Euro Zone)[1]. ; (iii) the state of actions planned by G8 and G20 sessions; (iv) the international and national growth of the inequality of the wealth's distribution; (v) the social unrests and civil wars, to quote some. It is obvious that the evolution .of e-Government and e-Governance, as presented in the *Electronic Government edited by Anttiroiko (2008*), generated online public services, reducing the administrative burden of citizens and organizations in their relations with the state. But the problems quoted above need also societal management (SM - more precisely: e-SM). The classic Enterprise Management cannot cover the complexity of a local, national or international socio-economic system (SES). There is a still a gap between the slow evolution of SM and the rapid development of ICT. The logical flow of this article is: (i) the background; (ii) a proposed very high level (vhl) model of the SES; (iii) a sketch suggesting the items of a SES's system engineering theory: (iv) a vhl on for the e-SM ICT platform; (v).a short comment on cost-benefit estimation; (vi) proposed future steps. To avoid excessive complexity, SES at country level is mainly considered. The very large bibliography is represented by a small but relevant exemplifying sample. The main objectives are: to: (i) sketch the content of the e-SM concept. (ii) stimulate the exchange of views on a future system engineering theory for e-SM .and (iii) suggest an architecture model for a e-SM ICT platform.

BACKGROUND

The relevant aspects are exemplified in three categories: (i) risks and issues (Table 1); (ii) progress of ICT (Table 2); (iii) obstacles to e-SM. (Table 3).

THE VHL MODEL OF THE SES

A first iteration of the vhl model of the SES including its general environments and its structure (in subsystems) is presented in Table 4 and Figure 1.(in a next page).

The links in Figure 1 can be: (i) physical flows: (1). man - years -qualifications, (2) material, energy, scrap etc.; (3) financial flows e.g.:cash, financial titles etc.,(4) informational flows e.g. data, information or knowledge (ii) logical relations such as:(1) relationship (family links); (2) employment, (3) debtor (4) creditor, (5) owner, etc..

SKETCH OF THE CONTENT OF A SES SYSTEM ENGINEERING THEORY

The system theory of the SES should contain;

1. Management science structuring: (i) basic management (main: principles, vhl model of the human being (characteristics and behaviour); (ii) vhl enterprise management including the model of the organization; (iii) societal management; including the model, values and objectives of the SES; and their duals, (mismanagements**);**

Table 1. Global and specific examples of risks and issues

No	Reference (abbrev.)	Description (Examples)	Mitigation(M) or Comments (C)
		General Topics	
1	WEF Risks, (2013)	Global Risks: the highest risks are: severe economic disparities (~16.0); fiscal imbalances (15,8); water crisis (~15.5) CO2 rise (~15,2); no adapta-ton to climate change (~14,6); volatile agricultural and energy prices (~14,4); global governance failure (~14,.1) etc.	(C) The approximations were calculated by the author of the present paper using:: a) the scale is 2.5 to…4,2 for risk likelihood and impact b) risk's severity= likelihood x impact max. value ~ 17.6
2	GEO 5 (2012)	Global Environment Outlook a) drivers: demography, economy, atmosphere, land, water, biodiversi-ty, chemical, waste, CO2; b) political options; c) global responses.	(C) UN Global Environment reports generated international conferences => government commitments => disap-pointing results see G8 Rio (2012)
3	Schwab & Xavier i Sala, (eds), (2013)	WEF Competitiveness. -Countries are characterized by criteria applied to: institutions,:infrastructures, macro-economic environment, health, prima-ry education,. higher educations and training, goods market efficiency; labor market efficiency, financial effi-ciency, technical readiness, business sophistication, innovation etc.	(C) a) Circular diagrams ease the interpretation and comparisons with relevant averages b) The global competitiveness index varies in the range 3.13…5.72
4	Johnston & Jacobs (2012)	Club of Rome Manifesto for Change. Interdependent: (i) structural unemployment;, (ii) financial & banking crisis; (iii) food crisis, (iv) poverty (divorce between economic growth and human welfare); (v) inse-curity (e.g. social unrests, crime & violence, piracy, etc.)	(M) a) A new theory for clearing rifts: (i) production &employment; (ii); finance & economy; (iii) economy & ecology b)Reengineering the economic valuation of the contribution to welfare, (also direct, indirect and inter-temporal prices, natural and social capital); c) protection of the whole society & new generations.
5	Foster & Clark (2012)	Planetary Emergency: a) danger: of climatic irreversibility (the trend +2C in ~30 years); b) wealth monopolistic accumulation.	(M) a) Elimination of un-necessary acti-vities, economizing natural resources;. b) Socio - economic planning

Comment: growing awareness to dangers in complex contexts.

2. SES, socio-economic entities and relationships, principles,(axioms), hypotheses; definitions of the main flow and level indicators such as e.g: . (i) annual financial input (sales, credits etc.) and outputs (payments, disbursements etc.);, (ii) end of year liquidities, receivables, and liabilities, (iii) KPIs for SES and its subsystems;

3. SES invariants such as e.g.:(i) the cosmic, telluric, other physical automatic loops**;**; (ii) the human behaviour (according to needs, education and wealth) generating final demand of the SPSS; (iii) socio-economic and financial basic processes and virtuous and vicious socio-economic automatic circuits, generating the SOSS and SMSS demand;

4. Detailed qualitative models of the SES (see very simplified examples in Annex A)

5. Mathematical SES system engineering theory;.

6. E-SM information system based on interoper-ability and its five coherence levels: political (implicit); legal, organizational, semantic, technical;

7. Thresholds for defining the admissible domain of the values of KPIs.

A VHL POSSIBLE MODEL OF E-SM INFORMATION SYSTEM (ESMIS)

This section presents a vision based on: (i) the vhl model of the functional architecture of the: interoper-ability platform (Figure 2.); (ii) the vhl model of an Information Coherence Kernel (ICK- Figure 3.); the

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