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Delivering Knowledge Services in the Cloud

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ABSTRACT

Cloud computing has become a buzzword in various academic and business domains in recent years. The purpose of this paper is to look into this term within a different proposition as a knowledge delivery ecosystem instead of being merely a model for technology deployment. This paper tries to explore various topics and resources in recent years which have appeared in both scientific and business literatures that focus on providing “knowledge-as-a-service” (KaaS) based on the cloud’s value-added environment.

Keywords: Cloud Computing, Cloud Logic, Cloudsourcing, Meta-Web, Refactoring

INTRODUCTION

Doing a search on the term “Cloud Computing” on the web may yield various definitions from every single business enterprise or a research paper. As the “Cloud Computing” term is not new, today, the term has been so developed that computation is just a small part of it. The word “Cloud” which has an extended meaning for the “Internet” has now become more popular as it embraces various services, resources, and functionalities inside. Figure 1 shows the rough picture of such a growth in contents inside published books on the Cloud Computing topic. (While searching for the “Cloud” almost gives the same trend picture, we tried to use “Cloud Computing” to avoid results that might be irrelevant to the topic. Also the smoothing level of 4 has been applied to give the average trend

slope within 5 years. Check <http://ngrams.googlelabs.com/info> for more information on smoothing).

In such a positive trend, the Cloud has found its niche well as infrastructure, platform and software (IaaS—Infrastructure as a Service, PaaS—Platform as a Service, SaaS—Software as a Service). The new look to this trend is an integrated approach where all these three components of infrastructure, platform and software come together to provide an aggregated ecosystem for the delivery of services.

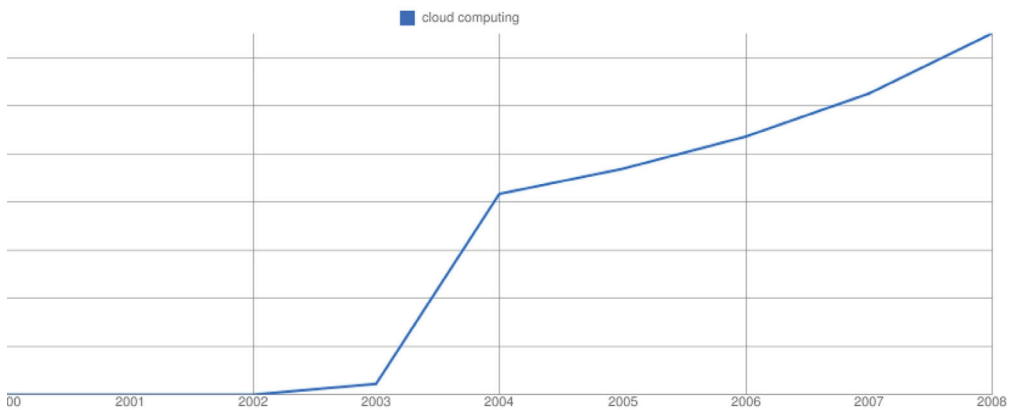
As there are various types of services that can be delivered based on a cloud ecosystem, in this paper, the focus is on the fundamental knowledge-based services that can be rendered in a cloud environment.

Knowledge-Intensive Services

As everyday passes on the web, there are more and more data available to be processed. This

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Figure 1. "Cloud Computing" term used in book available in Google (generated on Jan 2011 by Google Book Ngram)



speedy data accumulation calls for a real-time knowledge derivation mechanism to keep up at least the trade-off between knowledge demand and supply on a real-time basis with in an enterprise (In today's real world, the knowledge supply should even exceed the demands for prediction and forecasting purposes in a business environment). Middleton (2010) and Mohammed et al. (2010) describes this as "Data Gap" originally dubbed by LexisNexis where the knowledge demand outpaces the supply. There are various reasons that that brings this disequilibrium for knowledge feeds in knowledge-intensive processes. This is mostly brought about by a society's transformation into a knowledge-based economy whereby many of tasks and decisions are knowledge-based (i.e., dependent on what one knows and experience) and that knowledge, increasingly, becomes an item that organizations and individuals compete and excel for. Transformation into the knowledge-based economy gives birth to Knowledge Work. Most noticeably, some of the characteristics of knowledge work are:

- Increasingly less routine, more analytical knowledge that needs to be delivered more collaboratively

- Highly unstructured, unpredictable and disruptive knowledge which often comes with a sense of urgency
- The processes not only require data and information but also knowledge and experience of the individuals
- Group/Collaborative task execution, decision making and problem solving
- There is a huge amount of data and information to deal with (Information Overload)
- There are often more than one way to solve a problem, collaboration, reflection and learning.

While there are some of the reasons that stifle the process of generating enough knowledge to correspond to the needs of organization, on the other edge, there quality level should be increased to create the competitive advantage for the acquired knowledge. Rao and Osei-Bryson (2007) have described many of the factors that are involved in the knowledge quality process. Middleton (2010) describes it as a data processing spectrum . This spectrum shows the mechanism to decrease volume of the content while simultaneously increases the quality. This knowledge distillation procedure requires a super computing architecture to

achieve the desired knowledge for delivery to the end users. The concurrent processes over a huge chunk of data which approximately 95% of it has an unstructured format (Lyman & Varian, 2003) needs scalable computing power that is not obtainable in older computational models. Cloud computing enables this data analytic engine to render high volume of knowledge filtration while maintaining the quality that is the primary need for a knowledge-intensive process to stay competitive.

A Topology of Cloud Services

Commonly discussed cloud services are IaaS, PaaS and SaaS. There are various solutions and technologies that can be composed together to make up the needed service(s) depending on the requirements. In addition to these three fundamental types of services which are seen in many cloud computing references, the newer approach is delivering all these three in an integrated mode. OpenCrowd® has categorized this under the Cloud Software (Figure 2) which one major component of it is cloud integration. In delivering knowledge services, it is not merely about how each IaaS, PaaS and SaaS is working separately but the main consideration will be how well the cloud is integrated and synchronized. This can be seen as the ultimate effect of cloud logic and its goal is to deliver a service rather than just the benefits of technological enhancement in each of the individual components. One way of exemplifying the cloud logic is by means of its intelligence in “refactoring” a complex task. In other words, a cloud can “re-factor” (de-compose) a complex task into smaller tasks and allocate these tasks to appropriate service units/providers in the cloud (Koulopoulos, 2010). Refactoring is not limited to decomposing technological aspects of a task (such as scalability, flexibility, etc.) but also in terms of managing the service (e.g., quality of the service, time to deliver, knowledge embodiment, etc.) properly in order to create a value-added dimension to the services that are rendered above and beyond the usual capabilities that are made possible in the cloud architecture.

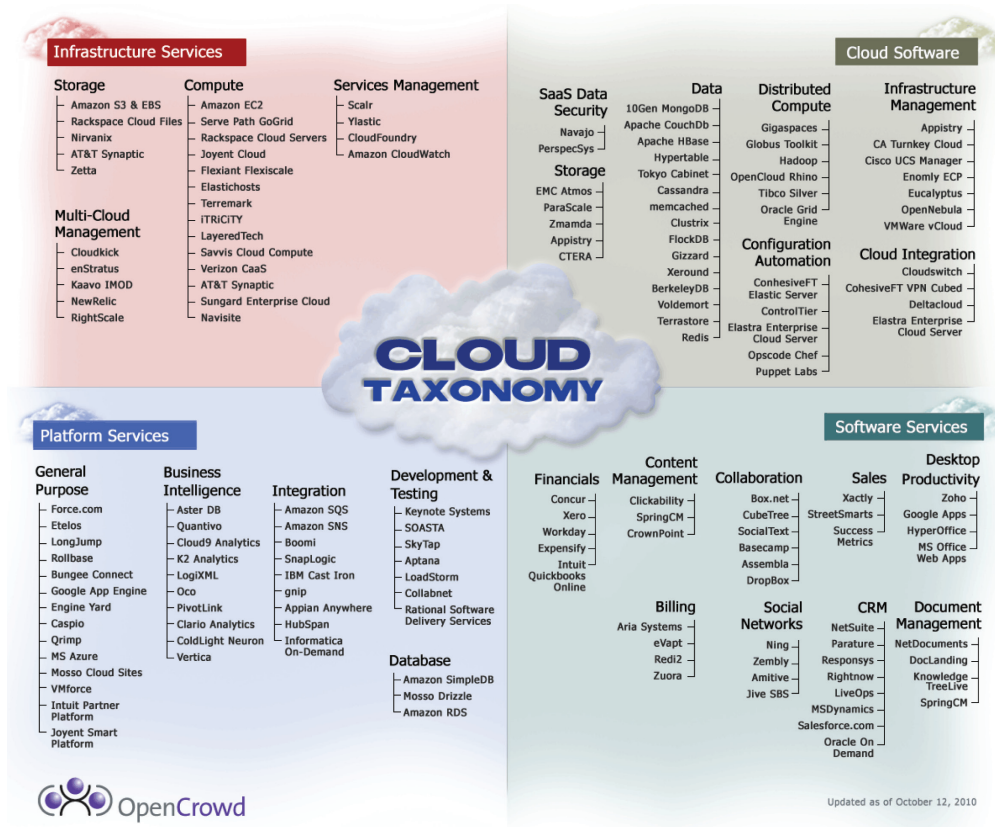
Cloud Value Chain

Mohammed et al. (2010) have adopted the famous Porter’s value chain model for the cloud implementation. They have discussed this value chain under different scenarios and what they have concluded is that the primary services of a cloud computing ecosystem won’t be viable without proper attention to the supporting business oriented services. In fact, the fundamental components of IaaS, PaaS and SaaS are viable through the interaction that are made by the satellite supporting services around them to be fully and efficiently utilized for the delivery of the service. In simple words, the value creation occurs when there are services available to be rendered and keep the primary services’ wheel move along, else, with no coherent service delivery which should use every component of the primary services, either there will be no value added service to be delivered or incoherency of resource usage might end up with even lower value creation due to wasted resources.

Cloud Intelligence

Value creation in the knowledge services may rely on different factors based on the needs and the context of the knowledge. Meanwhile, for the knowledge to be properly applicable and competent, there should be sufficient embedded intelligence involved in this creation. Most people consider the cloud as some kind of backend resources for storage and computational support. However, if one re-thinks and positions the cloud as the “front end” of a massive computational cluster then the scenario and the cloud impact become very different. As the front end, one would consider the cloud being a loosely coupled network of data and computational clusters with the ability of tapping in human input. Under this environment, among other things, extended data and text mining can be carried out on distributed databases including unstructured data/information, a complex problem may be decomposed and some well confined and straight forward computations can

Figure 2. Cloud taxonomy (www.OpenCrowd.com)



be carried out by a specific cloud cluster configured for delivering a particular service, and problems that are computationally inefficient for computers to perform can be farmed out to massive group of cloud users and harness their collective decision/preference. All of the above activities require some form of intelligence to be embedded in the cloud. This intelligence can sit as the parent logic for many factors that involve in quality of the delivery (e.g., relevancy, currency, etc.). The high intelligence insertion in creating knowledge alone can be considered as a value add to the knowledge service, yet, there are many challenges involved in creating such intelligence within cloud. Some of these challenges are:

1. How to decompose a problem into smaller ones for parallel processing (aka grid computing)
2. How to discover new knowledge embedded in various large structured and unstructured datasets
3. How to allocate or divert resources to meet a surge in demand
4. How to dynamically prioritize tasks and orchestrate resources for high gains applications

In addition to all these, another big challenge is how to elicit human input on a massive scale (i.e., leveraging on the Social Cloud to provide “Human-as-a-Service”).

Figure 3. A schematic view of cloud intelligence

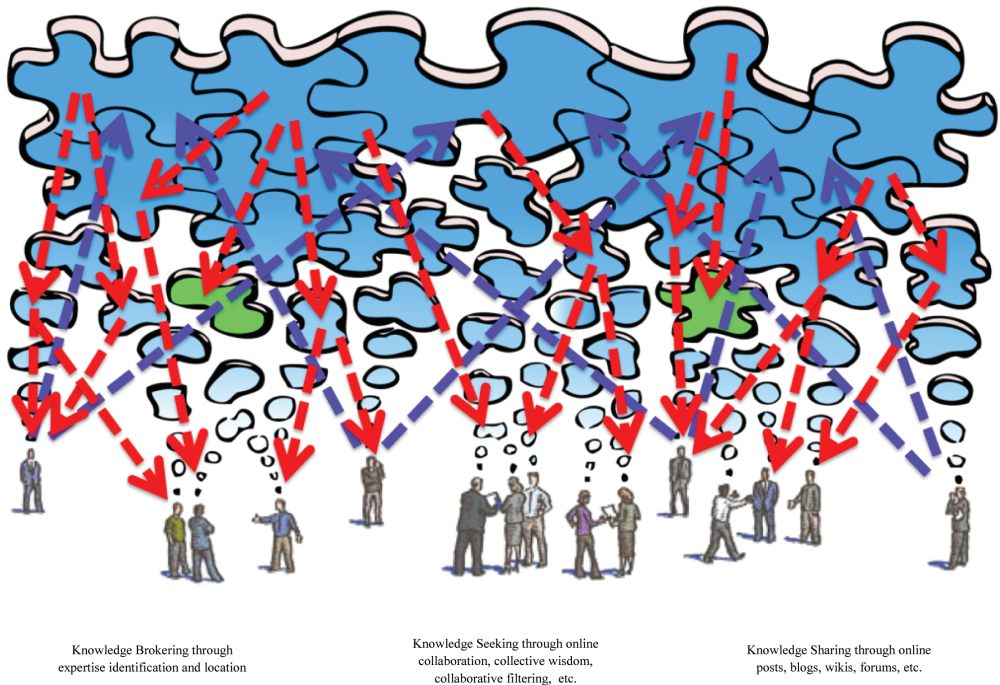


Figure 3 is a schematic view on how cloud can work in different levels of intelligence in order to tackle problems that could not managed in traditional look in grid computing.

Spivack (2008) classifies this intelligence into three levels:

- (1) *Crowd*: where each individual is bounded to the personal knowledge and is not aware of others in a system (absence of big picture). Another expression of this level of intelligence can be identified in system thinking modeling known as Bounded Rationality (Gigerenzer & Selten, 2001).
- (2) *Groups*: This is the intelligence level that includes collaboration of human agents and where knowledge generation and acquisition is made through interaction. However, while carrying out their individual actions, there is the concept of the “shared-self” among the agents in the group.

- (3) *Meta-selves*: At this level, every individual in the cloud is augmented with the intelligence level of the whole ecosystem. This is known as a conscious-web or meta-web level that delivers augmented knowledge service in a connection between introspection that occurs between the components of the cloud environment (for both human and machine).

Figure 4 shows the path from the current web which has been basically shaped on the crowd that delivers information toward a higher level of intelligent meta-web that is the basin for the knowledge delivery. As the diagram shows, the path from the web to the meta-web is a correlation between Degree of Social Connectivity and Degree of Information Connectivity. One important element that should be taken into consideration on this path is that - technology

Figure 4. From the web to Metaweb (Nova Spivack, www.mindingtheplanet.net)

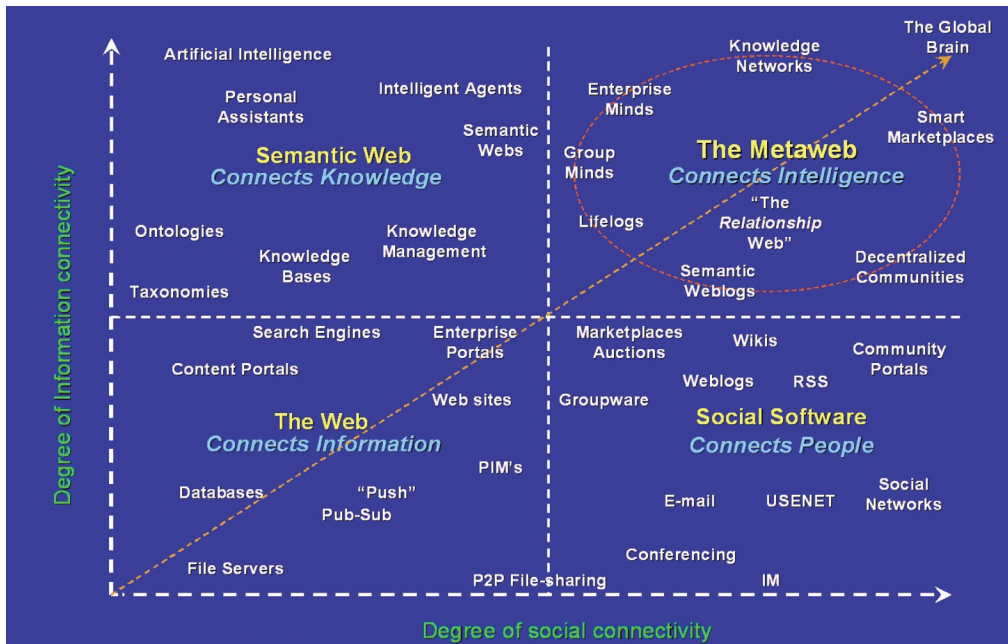


Figure 5. From the crowd to cloud journey



alone cannot take the web of the current state to the Metaweb level.

Koulopoulos (2010) identifies the technology as an engine and not logic. He emphasizes that technology has been in place for many years but the move to leverage from the cloud needs “Refactoring”. This means, software, as

well as hardware, should apply new logic to enable cloud to work on its claimed unique characteristics of scalability, flexibility, etc.

This will take us to another step to see this approach more systematically through the knowledge perspective. In this respect, this study classifies this trend into 4 levels from

the knowledge management perspective. As Figure 5 shows, this starts from the lowest level of intelligence to the highest level as MetaWeb.

Although the work collaboration and co-operation has been used interchangeably, there is a big difference between these two terms as the former refers to mutual engagement of participation while the latter is distribution of a task with each person in charge of a portion of the problem (Dillenbourg, Baker, & Blaye, 1996). This can be seen from a different perspective, where the difference of Crowdsourcing and Collaborative Web 2.0 technologies are in focus. One level beyond collaboration is the co-creation where mutual engagement becomes real-time interaction with the system. In other words, Co-creation is a kind of crowdsourcing mechanism where different tasks are distributed to different agents simultaneously. The big difference between the crowdsourcing and crowdsourcing is the task-agent relationship whereby in the crowdsourcing, this relationship is one to one versus many to many in crowdsourcing. The final stage of this hierarchy is Co-evolution which has emerged from crowdsourcing. In this mechanism, the task relationships are evolved or mutated based on the self-organizing architecture. In simpler terms, the metaweb is created over the meta-selves through mirroring the action of improvised by the agents (Spivack, 2008).

CONCLUSION

This paper outlines the basic concepts of cloud computing and, by positioning the cloud as the front end of the computational value chain, identifies the challenges and opportunities for delivering Knowledge Services in the cloud. In particular, cloud logic, which underpins much of the intelligence in a knowledge cloud, emerges as a key area for researchers to focus on in order to identify, prioritize, decompose tasks and scale up resources dynamically in the cloud for high gain applications. Refactoring a complex problem by cloud logic can help to

decompose the original problem and allocate to some dedicated services and/or a massive group of human agents to resolve. Such an approach is especially promising for those computational tasks that machine processing is inferior to human judgment. Advancements in Web 2.0 offers, among others, crowd sourcing and massive collaborations but the intelligent knowledge cloud delivers future knowledge services at even more elevated levels; the cloud makes it possible for mass co-creation to occur and is the central plank for the evolution of the MetaWeb.

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Social Responsibility: A Crucial Knowledge and Ethics

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ABSTRACT

Both the economic practice and education in the decades after the 2nd world war continued the previous trend toward over-specialization resulting from the huge amounts of knowledge piled up. But both the global impact and the local action require linking of specialists in interdisciplinary creative cooperation for their work processes to succeed. 'Division of work' was much more stressed than 'coordination' and 'cooperation' and still is so. Oversights result with consequences reaching all way to global crises, including world wars. Systems and cybernetic theories have offered remedies in some of their many versions, including the knowledge systems science, but with a poor acceptance on the part of over-specialists and bosses. In the recent decade a new remedy has been offered under the label of social responsibility. Data from USA, Germany, etc., show that customers are increasingly embracing it. This makes this invention start becoming a crucial non-technological innovation, which shall enter the economic practice and education quickly. It shall not tackle organizations only, but become a human attribute of all influential persons and their organizations from family to the entire world.

Keywords: Dialectical Systems Theory, Global Economy, Invention-Innovation-Diffusion Process, ISO 26000, Requisite Holism, Social Responsibility, Socio-Economic Order

THE SELECTED PROBLEM AND VIEWPOINT

On the basis of the prevailing economic practice, education in school and outside school provides young and adult persons with basic values, culture, ethics, and norms (VCEN) and related knowledge. Due to huge growing

of knowledge and bad experience with the life in preindustrial times, the entrepreneurs-run society – called capitalism – has introduced VCEN and knowledge of extremely narrow specialization. The resulting one-sidedness was supposed to be overcome by a totally free market and multi-party political democracy taking care of the common benefit. Now, one sees that this approach has caused two world wars and many crises, including the current

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world-wide crises with global detriments, but benefits for very few. American researchers report that the percentage of property owned by one single percent of Americans has grown from 37% to 70% in only 12 years after 1995 (TV Slovenia I, 2011). But one also reads about the rapidly growing customers' preference for suppliers with the image of social responsibility (SR) (Gerzema, 2010) and about rather small percent of shopping-addicted persons: under 6% in USA and under one percent in Germany (Zgonik, 2011). These data let us hope that economic theorists and policy makers will soon stop seeing the only dilemma between either market or central government as means of overcoming the one-sidedness, and will support SR to this end.

Education for holistic thinking/behavior is not widely spread; there are three international federations of associations of professionals in systems theory and cybernetics (IFSR, WOSC, EUS) with about 50-60 member associations and some 30.000 members. There are also several professional association using systems approach and cybernetics inside their specialized fields, but forgetting about their routes rather than joining the three federations or the efforts of the IASCYS (International Academy for Systems and Cybernetic Sciences) to help promote interdisciplinary approach as the best way to requisite holism (RH) and hence to less of the tough crises, including the current ones. An especially crucial role belongs to entrepreneurs and managers, including the political ones: it is their society that has replaced the feudal society and economy with big success and crucial terrible consequences that are no longer simple side-effects.

Thus, there is a need for innovation of the prevailing habits and related education. The concept of SR offers a new chance for more of the RH to be practiced. But it requires – like every novelty aimed at becoming innovation – its own invention-innovation-diffusion process (IIDP) rather than passing a decision only. Its first step is detection what has to be given up and what can be introduced instead.

THE DEAD ALLEY CAUSED BY THE POST-WAR NEO-LIBERALISM

Quite many authors agree that the neoliberal capitalism, which has denied social responsibility (SR), caused the current crisis by creating 'Bubble Economy' with monopolism – under the label of a totally free market – that provides chances only to a small minority of population (e.g., TV Slovenia, 2011; Božičnik et al., 2008; Dyck, 2011; Goerner et al., 2008; Korade, 2011; Senge et al., 2008; Stern, 2006; etc.: see references in Mulej, 2010, 2011, on which this contribution is partly based).

- In less than 150 years the world-wide span of wealth (measured in national per-capita-income) has grown from 3:1 to +500:1, leaving 85% of humankind under six USD a day and hence angry and envious, or without ambitions.
- The natural carrying capacity of the Planet Earth to support the destructive living style of the current civilization has been overburdened several decades ago.
- The increase of standard of living after the 2nd World War has been fictitious: the huge cost of maintenance of the natural preconditions for humankind to survive has been postponed and piled up rather than covered in real time. The unavoidable renewal of these preconditions may cost more than both world-wars combined, if the action is immediate; or even 20% of the world-wide GDP, if the action is postponed for another 20 or so years.
- The increase of standard of living after the 2nd World War has been fictitious, also, because of growing and hidden debts of countries of the so-called developed world. These debts are now made visible around the world (In July 2011, when we are writing this contribution, USA is trying to avoid the country's bankruptcy with changing the official limit of government's debts rather than by redistribution of incomes; daily press reports).

- The big depression of 1930, to which the current crisis is found quite similar, according to many authors, was not simply resolved with Keynes's economic measures, but continued as the 2nd world war in order for humankind to resolve the problems left over after the 1st world war. Similar problems are around. And so are nuclear weapons able to destroy the Planet Earth several times; this is a crucially new situation, a globally dangerous one.
- People forgot that organizations, including enterprises and states are their tools rather than authorities above people; they are tools of those in the positions of higher human authorities, only, more or less.
- The 'Bubble Economy' cannot last. SR must replace it.
- In other words, the lack of SR has destroyed the slaves-owning and feudal societies and has created room for democracy and free-market economy; but the same lack of SR is surviving, called financial, neoliberal or feudal capitalism. Legal names are different, not much else. The big entrepreneurs and their enterprises, especially the multinationals, are not subordinated to any law, because there is no world-wide law and democracy, but only an international law that is not compulsory and is therefore fictitious for those who decide not to obey it.
- one-sidedness rather than RH of behavior of influential persons and their organizations.
- European Union (EU, 2001) mentions officially four contents of SR (of enterprises): the point is in a free-will-based acceptance of the end of abuse of employees, other business partners, broader society, and natural preconditions of humankind's survival, beyond law.
- In literature on business excellence one requires more – upgrading of its measures with SR (For overview see: Gorenak & Mulej, 2010).
- In further literature one sees connection between systemic thinking and SR (Cordoba & Campbell, 2008).
- A fourth group of references links SR with world peace (Crowther & Caliyurt, 2004).
- ISO 26000 (ISO, 2008) requires a *holistic approach* (based on *interdependence*) and includes seven content areas: (1) organization, management and governance, (2) human rights, (3) labor practices, (4) environment, (5) fair operating practices, (6) consumer issues, and (7) community involvement and development. See Figure 1.

This is why SR is so much needed and discussed today. But the content of SR is differently understood.

DEFINITION OF SOCIAL RESPONSIBILITY (SR)

There are many millions contributions about social responsibility on webpages; they are too many to read. Our selection shows the following situation:

- The simplest and oldest version of SR is charity, but it might only be a mask for real

The definition in ISO 26000 was not passed by theorists and politicians, but by the international standards organization that is backed by businesses. Therefore, we prefer to build on it, when the topic tackles education, innovation and entrepreneurship.

ISO 26000 foresees no certification and no customary international law, for the time being.

SR is aimed at support to sustainable development.

SR intends to support honesty instead of abuse of power toward: Coworkers, Business and other partners, broader society (incl. charity), natural preconditions of human survival, etc. All these attitudes lead to well-being enabling satisfaction, causing motivation, supportive of good business performance as a root of business success.

Organizations of all sizes and programs, both private and public, are addressed.

Figure 1. Social responsibility: 7 core subjects

Social responsibility: 7 core subjects



* The figures denote the corresponding clause numbers in ISO 26000.

SR is attained once one reaches beyond legal obligations.

SR attains all these attributes as VCEN and strategy of RH based on interdependence, not independence (that is possible and necessary in legal terms only for nobody to be allowed to abuse other people and nature, but not in natural and economic terms because of the unavoidable specialization).

By realizing the sketched attributes *reduces/eliminates troubles/costs* caused by lack of satisfaction that would cause 'opportunity cost', e.g., by: strikes & poor work, lost markets, lost suppliers, lost partners, lost good image and trust, riots, terrorism, eco-remediation, medication, ..., i.e., by one-sidedness and abuse of power.

ISO 26000 states explicitly that SR supports:

- Competitive advantage;
- Reputation;
- Ability to attract and retain workers or members, customers, clients or users;
- Maintenance of employees' morale, commitment and productivity;
- View of investors, owners, donors, sponsors and the financial community; and
- Relationship with companies, governments, media, suppliers, peers, customers and the community in which it operates.

SR is hence a crucial novelty that is aimed to become a non-technological innovation via

IID process (for it we have no room here; see e.g., Zenko & Mulej, 2011). We say so because the ISO 26000 is, to the best of our knowledge, the first ISO document including the following words claiming the holistic approach and interdependence (lines 896–900 in ISO 26000).

An organization should look at the core subjects holistically, that is, it should consider all core subjects and issues, and their interdependence, rather than concentrating on a single issue. Organizations should be aware that efforts to address one issue may involve a trade-off with other issues. Particular improvements targeted at a specific issue should not affect other issues adversely or create adverse impacts on the life cycle of its products or services, on its stakeholders or on the value chain.

In ISO 26000 the holistic approach and interdependence indirectly are addressed also indirectly with application of concepts such as: Stakeholders, accountability, transparency, ethical behavior, respect for rule of law and other rules, honesty, human rights, dialogue, wider impact, no abuse, no discrimination, healthy environment, no exploitation = interdependence considered. This means acknowledgment that the (requisite) holism is attainable by their interaction i.e., by informal systems/cybernetics thinking/behavior. This reminds us of Bertalanffy's words 'against overspecialization', and Wiener's practice of interdisciplinary creative cooperation.

DEVELOPMENT ECONOMICS'S REASONS

In Mulej et al. (in press) we have shown the unavoidable economic development process briefed in Tables 1 and 2.

The phases briefed in Table 1 mean that the current civilization of humankind is facing the dilemma:

- Either destruction,
- A prolonged innovation phase based on RH of IIDP rather than one-sided processes, or
- A new phase, a 5th one; it includes:

- Creative happiness based on VCEN based on practice;
- Resulting ethics of interdependence and interdisciplinary creative co-operation;
- With SR replacing the content-empty phase of affluence;
- For selfish reasons, people are less selfish, short-term thinking, and narrow-minded, and they apply more RH/SR, in order to survive;
- No more 'Bubble Economy' and extreme government/countries' debts;
- Sufficiency along with efficiency;
- Jobs by shorter working hours and creative leisure/free time;
- More holistic information added to GDP etc.

This urgency is even more stressed by the extremely rapid changing of the socio-economic practice after the WWII, briefed in Table 2.

Social Responsibility: As a Solution for Problems Caused by One-Sidedness of so Far

SR actually supports solutions to problems that result from one-sided management and behavior, and are very costly to repair. They show up in many forms.

- Lack of non-stop IIDP attaining RH instead of one-sided keeping the obsolete practices. Solution must include education for RH and ethics of interdependence, in practice.
- Lack of IIDP reaching beyond:
 - Closed-in R&D toward open-innovation IIDP (Chesbrough, 2003);
 - Buying equipment for production and other work processes;
 - Buying intangible goods such as patents, licenses, brands, models, and know-how;
 - Industrial engineering, design-and-trial production.

Table 1. From scarcity via complacency to the danger of a new scarcity or a new, 5th phase

Phase	Economic Basis for Development	Related Values, Culture, Ethics, Norms (VCEN)
1. Ownership of natural factors	Natural resources and cheap labor, providing for a rather poor life of majority for millennia	Scarcity and solidarity, collectivism, tradition rather than innovation
2. Investment in modern technology	Foreign investment into the area's economic development; hardly/poor competitiveness in international markets	Growing differences, local competition, individualism, ambition to have more, be rich
3. Innovation based on local knowledge	Nation or region lives on its own progress and attains a better and better standard of living by international competitiveness	Growing differences and standard of living, global competition, ethic of interdependence, social responsibility, ambition to create
4. Affluence	People have finally become rich, which makes them happy in material well-being as a blind alley	Complacency, no more ambition, consumerism, greed beyond need; what is quality of life, then?
5. RH creation and social responsibility (SR)	Material wealth suffices; effort aimed at spiritual wealth, healthy natural and social environment as requisitely holistic well-being	Ethic of interdependence and SR, ambition to create, diminish social differences to those caused by creation, including innovation

It shall reach toward transition from such passive and one-sided to creative and RH approaches to the IIDP, including all types of innovation rather than the technological ones only (Table 1). Solution must include competitiveness etc., creativity and enjoyable work of co-workers and hence their commitment to their organization, and resulting high engagement at work (SarotarZizek et al., 2010).

- Lack of RH-conceived selection of ideas that are suggested for R&D and IIDP. Solution requires end of destroying the available human, technological, and financial resources into small pieces that allow for only incremental rather than radical innovations.
- Lack of RH-consideration of all types of innovation (Table 1). Solution requires IIDP-friendly VCEN in the organization and in society at large.
- Lack of RH-respect for co-workers' and outer partners' creativity and RH in all phases of the IIDP. Solution requires managers to innovate their management style to attain less passiveness and feeling of co-workers as subordinated employees,

that their only remaining right is their right of irresponsibility (Mulej et al., 1987).

- Lack of RH-consideration of potential future needs of potential future customers in the moment of decision to start an IIDP. For this consideration now the anthropologists, ethnologists and similar 'soft' scientists are found very useful because their observation methods discover more hidden attributes than the marketing and R&D methods do.
- Lack of RH-consideration of the theory of innovative business. Solution requires consideration of all of its very many attributes and their individual and synergetic impacts on success (Mulej et al., 2008).
- Lack of RH-consideration of all possible sources of inventions, innovations, and diffusion ways in the 'open-innovation' style of business. Solution requires innovation of innovation management by innovation of management (Mulej et al., 1994).
- Lack of RH-consideration of demographic changes in society to be served. Solution requires use of systemic thinking for the big picture to enter the scene and diminish the oversights (Mulej et al., 1992).

Table 2. Socio-economic development after the 2nd World War: from supplying to socially responsible enterprise (N.B.: X = synergy)

Decade	Market & Social Requirements	Enterprise's Ways To Meet Requirements	Type of Enterprise
1945-	Covering of post-war conditions of scarcity, rebuilding, etc.	Supply of anything; supply does not yet exceed demand	Supplying Enterprise
1960-	Suitable price (as judged by customers)	Internal efficiency, i.e., cost management	Efficient Enterprise
1970-	Add: X quality (as judged by customers)	Add: X technical & commercial quality management	Quality Enterprise
1980-	Add: X range (as judged by customers)	Add: X flexibility management	Flexible Enterprise
1990-	Add: X uniqueness (as judged by customers)	Add: X innovativeness management	Innovative Enterprise
2000-	Add: X contribution to SD (as judged by customers)	Add: X sustainable development management	Sustainable Enterprise
2010-	Add: X social responsibility	Add: X honesty reaching requisite holism and wholeness beyond legal demands	SR/RH enterprise

- Lack of RH-creation and control of IIDP in vision, mission, politics, strategy, policies, tasks, operations, monitoring, training, education, and rewarding, and related information acquisition and distribution. Solution requires the same (Mulej et al., 1992).
- Lack of RH-consideration of the given and potential risks related to both the routine-loving/based and IIDP parts of processes and their synergies, be these risks personal, internal/organizational, in supply- or sales-markets of human, financial, technological, informational, motivational, etc. resources. Solution requires the same (Mulej et al., 1992).
- Lack of RH-consideration of the entrepreneurial spirit, entrepreneurship, and entrepreneurship-supporting climate based on VCEN and visible in IIDP projects and their realization. Solution requires the same (Mulej et al., 1992).
- Lack of RH-based transition from the closed-innovation to the open-innovation model of the IIDP. Solution requires innovation of VCEN and knowledge (Mulej et al., 2008).
- Lack of RH-consideration of the role of patents and other intellectual property rights. Solution requires buying and/or selling them in time rather than too late or too early, or even donated for market to emerge later on (Chessbrough, 2003).
- Lack of RH-consideration of organization's emissions into the natural environment. Solution requires eco-remediation, health care, disabled people care, curing of natural disasters, etc. (Hamman et al., 2010; Hrast et al., 2010).
- Lack of RH-consideration of productivity, efficiency, and effectiveness factors and resulting benefits. Solution requires reaching managerial horizons beyond narrow-minded and short-term criteria of success (Senge et al., 2008).
- Lack of RH-work on creation and maintenance of the VCEN and knowledge as well as possibilities supporting IIDP. Solution requires a permanent daily practice of all opinion-makers and others in organizations and society at large supportive of IIDP (Mulej et al., 2008).
- Lack of RH-work on creation and maintenance of the VCEN and knowledge as well

as possibilities of interdisciplinary creative co-operation of mutually different specialists. Solution requires managers to fight one-sidedness of specialists by strategy of IIDP (Mulej et al., 2008).

- Lack of RH-work on creation and maintenance of the VCEN and knowledge as well as possibilities of friendship. Solution requires managers' effort for creative co-operation of mutually different specialists, to fight one-sidedness of specialists and to enable them to not feel criticized, but rather completed up, by disagreements resulting from differences in selected viewpoints (Mulej et al., 2008).
- Lack of RH-knowledge of personal/professional attributes of all crucial co-workers. Solution requires companies to function as synergies of SME's-like units, which were mentioned here earlier.
- Lack of RH-understanding that the so called National Innovation System does not cover innovation and diffusion phases, but the invention phase only, or mostly, in a best-case scenario. Solution requires government to support IIDP and SR by having all parts of the public sector supplied only by the organizations with most innovation, SR, business excellence and total/systemic quality (Mulej, 2007).
- Lack of RH-assessment of and respect for imagination capacity of managers and co-workers. Solution requires organization of work processes that supports coworkers' effort to reach beyond daily routine obligations (Mulej, 2008).
- Lack of RH-consideration of, and respect for, innovation of the managerial style, organization and methods supporting democracy at work rather than one-way commanding management. Solution requires application of Figure 1 in this text.
- Lack of RH-consideration of the fact that external focus, decisiveness, imagination and courage, and RH of inclusiveness and domain expertise belong to the dialectical system of crucial attributes of managers and their co-workers for the organization's business to be innovative. Solution requires permanent knowledge refreshment and related VCEN (Mulej, 2007).
- Lack of RH-consideration of the fact that success of IIDP is not normal, but failure is. Solution requires the approach to the contemporary, i.e., innovative business to attain RH, for more than only a small percentage of ideas pass from the pre-development to the development of new options, and from there to the operation phase, and finally to the replacement phase (Mulej et al., 2008).
- Lack of RH-consideration of the future market trends in order to prevent the going-down phase of the product or service life cycle, and hence organizational life cycle, rather than falling into the trap of "recovering from success" due to oversights. Solution requires employment of knowledge and expertise of soft-science professionals beyond marketing and engineering, such as anthropologists and ethnologists (Mulej et al., 2008).
- Lack of RH-consideration that measurement of business/innovation results matters, but the most crucial factor is the VCEN and related knowledge and resulting detection and use of possibilities. Solution requires use of opportunity cost calculation (Malik, 2010).
- Lack of RH-consideration that it is the nice/great experience which is sold to customers rather than products or services, only. It causes sending customers to competitors instead of SR service. Solution requires total customer orientation (Quinn, 2006).
- Lack of RH-consideration of the fact that organization can learn very much from good universities and institutes. Solution requires the organization to cultivate its absorption capacity and clear insight in its own needs for knowledge and VCEN to be absorbed from other organizations, of course, with an active adaptation rather than passive imitation of 'best practices' from other circumstances (Mulej, 2007; Quinn, 2006).

- Lack of RH-consideration that there is no one single best model or practice of the IIDP that fits all organizations and all social and natural environments. Solution requires open mind and adaption capacity (Mulej et al., 2008).
- Corruption and other abuses of business relations, resulting in image that prevents people from dealing with corrupt people; it excludes them from business life and friendship, etc. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Poor quality rather than excellence of supplies of goods, services and work, which lead to similar consequences as corruption. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Poor reliability as business and personal partners, which leads to similar consequences as above. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Bluffing or lying; both behaviors lead to similar consequences as above. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Persuasion of potential customers into fictitious needs for products, including medicines, and fictitiously necessary packaging, etc.; it leads to similar consequences as above and greed. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Fictitious democracy, in which on one hand most people feel excluded rather than invited to help and create, and on the other hand one-sided decisions are passed by 'majority in sessions' rather than majority in reality and the most holistic proofs. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Poor pay/wages/salaries along with enormous managers' and owners' incomes; it causes a poor market due to a poor buying capacity of 85% of people as well as hate on their part, like in slave-owning and feudal economies/societies. Solution requires cultivation of ethics of interdependence (Mulej et al., in press).
- Poor working-moral resulting from feeling that owners and bosses misuse their employees, whom they view as cost rather than as their creative basis and co-workers. This managerial attitude means that the bosses and owners prefer to manage routine work rather than knowledge and creativity. The latter two cannot be ordered, but enabled by management including SR in e.g., the form of requisitely holistically managed work relations. Solution requires cultivation of ethics of interdependence (Mulej et al., 2008).
- Fluctuation of co-workers, mostly the better ones; they are able to find other jobs. This fluctuation results in loss of their expertise along with the resulting need to spend much time and money for acquisition and training of new co-workers. Solution requires cultivation of ethics of interdependence (Mulej et al., 2008).
- Lack of fidelity, feeling of belonging due to impression that 'we are not co-workers, but tools rather than humans, and our only remaining right is the right of irresponsibility toward our bosses and owners'. Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008).
- Strikes resulting from the same feelings and their causes, including the mismanaged revenues distribution. Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008).
- Terrorism resulting from the same feelings in combination with nationalism and religious cover of economic and social reality. Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008), both inside organizations and in government.
- Resistance against novelties that should become innovations, because of the prior

experience that innovation can be used to cause un-employment rather than benefit except for the owners and bosses. Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008).

- Medical problems due to poor modernization of technology and work place safety. Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008).
- Medical problems due to abuse of the economic law of external economics by causing stress, polluting air, water, and soil, etc. Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008) and knowledge about environmental problems that are, at their roots, mental problems (Ecimovic et al., 2002).
- Rapid growth of population, because women are not enabled to study, while the more educated women have many less children; in addition, according to Nobel-Prize-for-Peace-2007 co-winner Prof. Dr. LuckaKajfezBogataj the growth of population and growth of energy consumption per person have together burdened the Planet Earth about forty times more over the recent two centuries (orally, 2008, at Otocec '08 conference on excellence, in round table). Solution requires cultivation of ethics of interdependence and innovation of the management style (Mulej et al., 1987, 1994, 2008).

Etc. (Based on conclusions from papers presented at Hrast et al., 2006, 2007, 2008, 2009, 2010, 2011, and our other research).

All these lacks of RH and resulting failures in taking all crucial attributes in account cause waste of both human and material resources instead of SR because the longer-term effects are over-looked as they are called less important side-effects. Side-effects are a wrong classification, as the above quoted data tell us; they

diminish competitiveness and hence benefits for all stake-holders and society at large. Both human and material resources are under-used, or wrongly used, especially the human creativity, capability, and VCEN. The usual accountancy does not show these facts, the opportunity cost calculation does.

The public data about the crisis, though, do not show the essence of the problem, but its visible consequences only. The problem did not grow on a tree; it results from human behavior that lacks SR for humans to be less selfish for selfish reasons, i.e., less short-term and narrowly oriented in their behavior than so far – in order for the current human civilization to survive. The Planet Earth can live without humans (again, like it used to live for millennia), but humans cannot live without a healthy Planet Earth and hence without a healthy economy (Hrast & Mulej, 2010; Mulej, Hrast et al., 2010; Mulej, 2010; quoted references; etc.).

Thus, for very economic reasons, IIDP and innovation, as its outcome, need a broader definition than a technology-related one only. The EU's definition (EU, 1995) is broad enough, in principle, although completely enterprise-based, but not elaborated in any detail; the technological innovation only is measured. This causes a misinformation in statistics, which make the misleading bases for governments', businesses', and individuals' decisions.

Additionally, safety issues can be added. The 2011 earthquake in North-East of Japan with a number of nuclear power-plants, the following tsunami, destruction and radiation is well published in public media in March 2011, when this contribution is being created. The threats of one-sidedness rather than SR in e.g., human behavior toward humankind's natural environment, though, have so far received more attention of ecologists than of criminal justice and security scientists (Mesko et al., 2011).

From all these aspects, IIDP is badly needed, to reach SR, and to survive as the current civilization; in this connection a broader definition of innovation that reaches beyond technology is needed.

THE BREADTH OF PERCEPTION OF INNOVATION IN THE 2008 CRISIS CONDITIONS

Forty years ago, in 1971, OECD provided its broad and rather realistic official definition of innovation. But many still tend to limit this term to technological innovation, including the official international statistics. But: technology alone does not create the future; it is a tool of decisive humans and their followers (Collins, 2001; Collins & Porras, 1994). If it is a tool, does either one-sidedness or RH/SR in humans' behavior show the way out from the 2008- crisis? Data about results of the recent decades expose the dangerous impact of one-sided decision makers, and the need for RH/SR (Božičnik, 2007; Božičnik et al., 2008; Harris, 2008; Senge et al., 2008; Stern, 2006; etc.). SR reflects RH and wholeness of outcomes based on a RH, rather than one-sided approach to human activities.

The official international definition of innovation does not cover technology only, but the statistical guidelines in the related Oslo Manual cover technology only:

- Innovation is the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organization, and the working conditions and skills of the workforce (EU, 2000, p. 4).

In the current trends, innovation may not be reduced to IIDP of products and services; it must rather cover the non-technological issues, too, or even first of all (Table 3).

Innovation of VCEN tends toward SR, ethics of interdependence, sustainable future, and RH of approach leading to requisite wholeness of outcomes of the human behavior. Management style- and VCEN-related innovation is the most influential: it switches from

- 'I think and decide, you work only' to
- 'We all think and we all work, and we all listen to each other to attain RH' principle.

This double innovation enables other types to show up. Management, governance, and organizing must become crucially more RH than in the concept of the Chicago School of neo-liberal economy opposing and disabling Adam Smith's liberalism and its invisible hand (Gorenak & Mulej, 2010; Senge et al., 2008; Toth, 2008; Smith, 2010).

The 2008- crisis was not caused in 2008; it only surfaced then, as a consequence of the neo-liberal fictitious, rather than realistic, model of omnipotent market, causing also fictitious innovations by bank- and finance- people and the break of the fictitiously working real-estate market in USA (e.g., TV Slovenia I, 2011). This crisis is obviously much deeper: the market cannot be relied upon, because it does not work as predefined by A. Smith (Smith, 2010). Neither can governments be reliable, if they are biased and one-sided rather than requisitely or even totally holistic in their approach (Mulej & Kajzer, 1998). Thus, they can hardly attain the requisite wholeness of their insights and other outcomes.

Social Responsibility: Potential Innovation that Reduces Cost

If we consider the cited issues with RH, we find that SR only fictitiously and in a short term causes uncovered and avoidable costs (opponents of SR quote costs as reasons against SR, often; see public press). Costs of honest behavior replace – as an opportunity cost that is hard to see in book-keeping data – costs that are clearly visible in book-keeping data, although often indirectly, such as cost resulting from:

- Mistrust on the part of managers, coworkers, and business partners,
- Double-checking of creditworthiness of new business partners, replacing the lost ones,

Table 3. 40 basic types of inventions, suggestions, potential innovation and innovations

‘Innovation is every novelty, once its users find it beneficial in practice				
Three networked criteria of inventions, suggestions, potential innovations, and innovations	(2) Consequences of innovations		(3) On-job-duty to create inventions, suggestions, potential innovations, and innovations	
(1) Content of inventions, suggestions, potential innovations, and innovations	1. Radical	2. Incremental	1. Duty exists	2. No duty
1. Business program items	1.1.	1.2.	1.3.	1.4.
2. Technology (products, work processes)	2.1.	2.2.	2.3.	2.4.
3. Organization (process-based rather than one-sided subordination-based)	3.1.	3.2.	3.3.	3.4.
4. Managerial style (co-operative rather than one-way commanding)	4.1.	4.2.	4.3.	4.4.
5. Methods of leading, working and co-working (supportive of co-operation)	5.1.	5.2.	5.3.	5.4.
6. Business style (co-operation with business partners)	6.1	6.2	6.3	6.4
7. Governance & management process (supportive of cooperation in daily practice)	7.1	7.2	7.3	7.4
8. VCEN (supportive of cooperation and reflecting interdependence)	8.1	8.2	8.3	8.4
9. Our habits (realizing contemporary VCEN in our practice)	9.1	9.2	9.3	9.4
10. Habits of others (realizing contemporary VCEN in their practice)	10.1	10.2	10.3	10.4

- Dissatisfaction, causing poor work,
- Strikes, resulting from dissatisfaction, be them visible or white,
- Loss and regaining of high-quality co-workers and other business partners,
- Manager’s and co-workers’ routine-loving rather than creative/innovative behavior,
- Misery and poor health and illnesses (which are cured rather than prevented),
- Remediation of consequences of natural disasters, terror, and wars,
- Etc.

Thus, SR changes the practice of ownership as defined by the – still accepted – Roman law saying that the ownership gives to the owner the right of use and abuse. Abuse must be replaced by SR/RH for humankind – and its organizations, for that matter – to survive as

the current civilization. This civilization faces problems of (1) extreme division and (2) affluence. Affluence is subjective; it causes the lack of ambition to work hard in order to have more, once one has everything one feels as a need (James, 2007). Need differs from greed that is said to mean that ‘one buys things, which one does not need in order to impress individuals for who one does not really care’. Greed supports production beyond needs, but it ruins nature beyond needs, too, and is detrimental, in the longer terms, at least.

Development of SR is, hence, aimed to be an innovation of human behavior toward ethic of interdependence and resulting RH – for clear business reasons.

For SR to become more than a word, a strategy of promotion of SR – as a potential innovation – might be needed (Hrast & Mulej, 2008, 2010).

STRATEGY OF PROMOTION OF SOCIAL RESPONSIBILITY

SR is a demanding concept to promote as a specific case of RH having to do with the human approach to other people and nature. For success/survival many/all influential people should practice RH via SR. Work of a few individuals – professionals is not enough, except in the seeding phase, a general social support based on a clear strategy is needed, e.g., on the national, international, and world-wide levels. This is visible from the summarized data and cited references.

SR Mission should be to promote global VCEN of SR in order to help humankind, including one-self, survive by *doing something good* to all stakeholders (based on RH) rather than evil (based on one-sidedness) beyond the official legal obligation and rather limitation to shareholders or owners only.

A working group with an interdisciplinary composition should prepare a draft strategy. Later on a special Agency for Promotion of SR might have to be established, in any country, integration of states such as European Union, and world-wide. Its tasks should include coordination of country-wide and world-wide SR-related activities in co-operation with several professionals and institutions. Thus, the following goals should/could be met:

1. To create a basic interdisciplinary core of researchers working on monitoring the situation concerning SR in the area under investigation, to compare the collected findings and suggest changes in the given area.
2. To prepare legal draft bases for legislation changes, where they are needed to cover SR everywhere per areas.
3. To prepare professional, RH bases for making up the SR program in all ministries.
4. To establish dialogue with professional associations, government bodies, public institutions, non-governmental organizations, businesses and other parts of society in order to attain a shared activity for promotion of SR.
5. To include topics on SR in primary, secondary, higher and life-long/adult education, and to promote values of SR in daily mutual contacts of youngsters and adults alike.
6. To create and implement a nation and world-wide program of public relations communication about SR in order to promote general awareness on how crucial a SR-based behavior of all humans and their organizations is for getting the society out of the current, as well as preventing long-term, crises.
7. To establish portals for both-way communication in public relations concerning the SR-based behavior with both good and bad examples.
8. To collect good and bad examples of SR and related practices of RH and innovation based on SR rather than on one-sidedness, for the society to become, be and remain an RH and innovative society with SR as a basic criterion of its excellence.
9. To collect information on development of SR anywhere and in the area under investigation in order to report about them.
10. To support initiatives of various stakeholders promoting SR and practicing it.

Tactics and operation should be defined per areas, but in the style of a coordinated decentralization: whatever can be done on lower administrative levels remains there.

Ethic of interdependence expresses VCEN enabling the strategy of SR. This includes weighing and concerting of solidarity and economic efficiency, sufficiency, and effectiveness by RH via SR. This may help humans to provide an equilibrium with no resulting need for too much solidarity (such as the 'equal stomachs philosophy' from the pre-industrial village solidarity) or too much protesting against the one-sided decisions and actions of authorities all way to terrorism (See also: Korade, 2011).

This strategy and ethics of interdependence may be well supported by a RH approach to the governance and management process.

- *Vision* may be briefed as “survival on the basis of competitiveness by RH/SR creative work and cooperation aimed at a systemic quality in accord with customers’ requirement.”
 - *Mission*: “delight customers with an excellent systemic quality and attract them as sustained and sustainable customers.”
 - *Policy*: “implement innovative business and SR as a source of a continuous systemic quality in all parts of the business process and all units.”
 - *Strategy* towards implementation of such a policy may employ continuous self-assessment of one’s own quality in terms of the Deming Prize of Japan, the European Excellence Award, or Baldrige Award of USA, or (as a first phase) attainment and re-attainment of International Standards Organization’s rules as ISO 9000, 14000, 27000 certificates, and/or something similar (See the Slovenian reward for SR HORUS at <http://www.horus.si>).
 - *Tactics* for implementation of such an IIDP strategy include *organized critique*, followed by teams, and task forces, work on solution of the selected problems (on a *free-will* basis and on company time, one hour a week) with awards for inventions (symbolic in value, but with no delay) and innovations. *Innovation reward* is foreseen for all of the innovative team, all members of their own organizational units, every organizational member including managers, while a half of the value created by innovation enters the company business funds.
 - *Practice*: permanent IIDP on a RH/SR basis as its management style and process.
 - *Monitoring and Intervening*: Managers’ committee for promotion of IIDP and excellence based on SR – in session once in 3 or (later) 6 months, agenda: 1. comparative assessment of all units; 2. variable part of income of units’ managers depending on this assessment; 3. approval of new innovation (of all 40 types in Table 1) related objectives of units.
 - *Rewarding*: non-monetary (justified feeling of being considered creative and innovative by peers and bosses) and monetary (e.g., 50% of innovation-based profit goes to enterprise funds, 50% to coworkers, of which: 30% to authors and coauthors, 10% to all in the innovative unit, and 10% to all in the enterprise, including managers).
 - *Training*: in profession and creation, including creative interdisciplinary cooperation.
- We learned from practice and its summary in e.g., Gladwell (2004, 2008, 2009) that a good preparation is crucial, but it includes consideration of conditions and preconditions, too.

Lines of Action to Undertaken

Several lines of action might be necessary:

1. Humans as individuals act in the roles of consumers. Practice has already shown up that consumers prefer suppliers, who have the public image of SR. Greed is also less popular than it used to be. After a level of material satisfaction well-being depends on other factors.
2. Humans as organizations act in three basic roles: (1) suppliers, (2) customers, (3) public awareness makers and users. In all of them they compete with others. The ones with the best image of RH innovators and SR actors in the market attract most customers and succeed. Reaching beyond law toward SR and RH helps competitiveness.
3. Humans as nations act via government and non-governmental organizations. Their bodies support competition and fight monopolies and other bases of abuse of influence of the more influential ones in their relations with the others. Thus, they support RH and SR with legal and moral tools.
4. Humans as nations do the same on the international levels, all way to the worldwide democracy, including a world gov-

ernment, made of very honest persons and coworkers.

This might lead to RH in society and economy by/based on SR (Hrast et al., 2006, 2007, 2009, 2009, 2010, 2011; Hrast, 2007; IRDO, 2006; Knez-Riedl, Mulej, & Zenko, 2001; Knez-Riedl, 2003a, 2003b, 2003c, 2003d, 2006; Knez-Riedl et al., 2006; Mulej & Hrast, 2010). Such attributes of behavior create new ambition, reaching beyond complacency of the affluent ones. No short-term efficiency, including e.g., abuse of external economics, or of the law of supply and demand, is enough. Then, a new economy can succeed.

Who can start the process? Many influential persons made history by making their individual values a culture, shared by a group of their followers, who then diffused this culture in order to make it a socially acceptable ethic, resulting in the social norms. Via these norms, one influences the individual values of other who have a dilemma to face: accept the novelty and be acceptable in the society or refuse it and be an outlaw. Norms may become law and support SR/RH, while SR reaches beyond law (ISO, 2008). Legal preconditions for law and habits to be innovated in order to support RH/SR and resulting survival of humankind are also needed, but they exceed the available room.

Contributions by Harris (2008), Martin (2006), several authors in Murphy and Martin (2009), LetnarČerňič (2009, 2010) etc. clearly demonstrate that survival of humankind cannot be taken care of well, as long as the international law has its legal basis on agreement without legal enforcement, thus denying itself as law. Similar problems show up with all other existing international organizations, including United Nations. Countries/states obviously tend to prefer their (businesses') more narrow and short-term interests over their citizens' broader and more long-term ones, thus ruining their basis of existence all way to threatening survival of their people and humankind.

Systems/cybernetic science community can also make a crucial contribution by e.g.:

- Awareness building of the general need for
 - Ethics of interdependence rather than dependence and independence (expect legal independence);
 - Requisitely holistic approach enabled by interdisciplinary creative cooperation;
- Provision of method supportive of interdisciplinary creative cooperation and ethics of interdependence;
- Exposing professionally the SR topics and especially the two concepts linking them: INTERDEPENDENCE and (REQUISITELY) HOLISTIC APPROACH.

CONCLUSION

'Problems cannot be solved with the mentality that has caused them'. Hence, the 2008- crisis cannot be solved with ethics of one-sided and short-term mentality of the industrial and neo-liberal economics, which has caused the 'Bubble Economy' of several recent decades. Neither the market nor the government alone have assured the common benefit of all humans so far, as they were supposed to in the so-called capitalistic or communistic/socialistic socio-economic order over the recent centuries. The pre-industrial mentality has neither been able to assure the common benefit that should result from the 'invisible hand' or the 'visible hand' of power-holders. The decisions/actions have always been made and taken by humans, making or heading organizations, be it families, enterprises, non-governmental organizations, public institutions, or government bodies. The role of organizations is to provide for synergetic co-operation of specialists toward holism as the basis of the common benefit.

These facts make us think about humans, their responsibility, values, culture, ethic, and norms (VCEN), with a focus on entrepreneurial and business life, in this text. They make us think about an innovative change in mentality (both as a process of beneficial change and as its outcome). Thus, we come to think of combining

in a synergy (a) social responsibility (SR), (b) innovation, (c) the (Dialectical) Systems Theory (as the theory of attainment of the requisite holism (RH), without which the benefit of all can hardly be yielded). This means that we do not see the (corporate) SR as a simple charity or honesty of owners and managers in their relations with their coworkers, business partners, broader society (including charity as a part of SR) and nature (as a general precondition of human survival after centuries of nature's destruction rather than maintenance), but as a/the new socio-economic order after neo-liberalism and its 'Bubble Economy'. The latter disregards the natural and human capacities too much to be allowed to continue destroying humankind and its natural preconditions.

Without SR, the current civilization hardly has a chance to survive. We prefer no limitation of SR to companies: they follow influential humans' decisions. SR is a human attribute. Interdependence makes human honest and leads from one-sidedness to holism.

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