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Social INFORMATICS

for Mankind

a United Future

Towards



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Social Informatics - Towards a United Future for Mankind

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Abstract

We must find the way to exist in harmony and communion just as the cells in our body function as one. We already realize that while fighting over resources, we must also cooperate in facing the truly great challenges that await us as a species. We *can* and must find a way to live in equilibrium with one another and to exist in homeostasis within our habitat. Let us march on to comprehend the network of networks of mutual influences in which we as human-beings act as a living, breathing system. *Social Informatics* (SI) - will grant us, for the first time, the ability to *truly* behold ourselves as a collective, to grasp the very core of our existence on this planet as a unified single organism, to realize how the entire of humanity is in fact a living, breathing, dynamic entity, which must find and invent itself as such. Let us awaken our great emergence. Social Informatics will enable us to clearly perceive our already-existing inter-dependence and to open our eyes once and for all to the big picture: We, human beings, are a one species. Only by striving towards a scientific comprehension and catalysis of our becoming as a living, breathing whole – an organism by all definitions – can we develop the solutions to allow us a steady state existence on this small planet, in harmony amongst ourselves and with our environment. Let us choose to win together, and march towards a future where mankind is united as a whole made up of unique individuals; Our power is in unity, and the secret of our unity is in grasping the potential of our variance. We will begin to develop computational systems allowing us to observe and model the anatomy and physiology of the human organism. We will gradually attain a deep understanding of ourselves as a live dynamic fabric, as a defined and discernible entity. Armed with this understanding we will discover the ability to project our evolution as a whole towards a place of a united, collective equilibrium.

Preface: Mapping this White Paper to Administration Guidance

The OSTP has decided to put great emphasis in the coming year (2010) on Federal Information Technology, stating that "**Greater transparency, accountability, and public participation** are central to the President's Open Government agenda." It is further attested that "the 2010 Budget reflects the growing responsibilities for federal IT management with \$75.8 billion for total federal IT spending, \$5.1 billion or 7.2 percent more than the 2009 enacted level." The OSTP also declares a determined will "to address the Administration's goal of **greater openness in government, wider participation by citizens in government, and a more collaborative, cost-effective federal IT enterprise.**" --[http://www.ostp.gov/cs/rd_budgets]

In that very spirit, the following white paper portrays the road to our true democracy, to our true openness throughout and across the social fabric, to a true state of government for the people and by the people. This manuscript depicts the ways in which we can enhance our administration and management on all scales, from the individual government we each exercise in our private lives and to the very means by which we decide to run ourselves as collectives. It is the mirror across from the mirror. It is the Global Biofeedback awaiting to emerge, to spiral us towards our true freedom for all, balanced and whole and anciently new.

As our time of social blossom is at hand, we are now beginning to witness national think-tanks sprouting in pursuit of social sciences' true potential. For example, *The National Academies' Division of Behavioral and Social Sciences and Education* recently launched (Oct 1 2009) **A Research Agenda for the use of Social Science Evidence in Public Policy**. The project launched a 12 months "ad hoc committee to conduct a study to develop an agenda for research on the public policy uses of knowledge from social science research".

--[<http://www8.nationalacademies.org/cp/projectview.aspx?key=49136>];

Our actions and policies already speak a tacit search; we already feel how a true science of society can transform our lives for the better and have begun to actively seek the ways to reach our Promised Land.

The glorious riches that await us in the merger between the Social Sciences and the Exact Sciences are already beginning to give their bloom. The following white paper is a portrait of the flowers and the fruit that await us, and a vision into the ways to fertilize our blossom into a magical garden.

1. Integrating Humanity - Towards a Science of Union:

Is it not time to understand the secrets of our inborn unity? Currently, the social sub-systems (S3) which make up humanity are trying without cease to pull our whole in a myriad of disharmonic directions. If we fail to decipher the secret of our unity within the near future, we will sober up to discover that our selfishness has swept Earth's floor from beneath our very feet of existence. We must strive to find the balance in which we as a species materialize as a collective human organism. We must find the way to exist in harmony and communion just as the cells in our body function as one.

We *can* and must find a way to live in equilibrium with one another and to exist in homeostasis within our habitat. If we fail to unite, if we destroy our breeding grounds in a wild proliferation frenzy like a cancer consuming its host, we will ultimately be left with nothing. Without our Home, for now we have no existence. Let us take the next step towards a better future, let us march on to comprehend the network of networks of mutual influences in which we as human-beings act as a living system.

There is already this feeling, slowly trickling its way into our awareness, that we are all on the same boat, and that while fighting over resources, we must also cooperate in facing the truly great challenges that await us as a species. The time has now come for us to begin an exciting and challenging new journey to bridge between the Social Sciences and the Exact Sciences. This new scientific realm - Social Informatics (SI) - will grant us, for the first time, the ability to *truly* behold ourselves as a collective, to grasp the very core of our existence on this planet as a unified single organism, to realize how the entire of humanity is in fact a living, breathing, dynamic entity, which must find and invent itself as such. Let us awaken our great emergence.

The high level of self-monitoring which we have established will allow us to follow and investigate the social processes occurring in the world in a way never before possible. Social Informatics will consolidate methods to observe the infinite amount of available data and to recognize patterns within it typifying collective human behavior on all scales - from socialization groups, to business networks, to cities, states, countries, peoples, religions and civilizations. We will begin to develop computational systems allowing us to observe and model the anatomy and physiology of the human organism. We will gradually attain a deep understanding of ourselves as a live dynamic fabric, as a defined and discernible entity. Armed with this understanding we will discover the ability to project our evolution as a whole towards a place of a united, collective equilibrium.

2. Knowing What We Know: *synthesizing a global vista of academic knowledge*

There is currently no element which produces an outlook of how academic knowledge takes form as a collective, how the physiological sub-systems of the human academic knowledge evolve, take shape and change. As a result, conflicting knowledge published in different venues and/or in different languages is unmonitored and so the incoherencies in the knowledge-network remain largely undiscovered. Moreover, a multitude of similar knowledge and conclusions keep on being redundantly re-discovered time and again, through an atrocious wastage of time and resources. As long as our image of academic profit is perceived through narrow vistas held by private or governmental academic institutions, and as long as our academic progress is reliant upon economic bodies with narrow business or geographical interests, mankind will not be able to progress towards our optimum

Because of human memory limitations, the amount of information which the average researcher can availably represent in consciousness has not changed dramatically over the past centuries. The amount of information accumulating in the various disciplines, on the other hand, is on an exponential rise through time. By not augmenting the human abilities to match the rising need for accessible memory, we are holding strong to our narrow outlooks and gradually losing our grasp on

the big picture, affectively shrugging at our responsibility to navigate the ship of our collective knowledge through the sea of life and death in which we exist.

Nature does not know a separation into disciplines; it is a unified fabric of intelligence waiting to be discovered as such. Through the development of computational tools for deep scale analysis of social networks we can produce a dynamic lucid picture depicting the state of the human knowledge-platform; by examining the social networks of scientific knowledge-commerce (e.g. e-journals, conference proceedings, professional online science forums, citation-mapping, cross-disciplinary thesis-mapping etc.), we can construct a continuous, unbroken image portraying the complete state of science.

Furthermore, a system which is able to computationally create whole representations of the scientific knowledge base will also know to direct us to contradictions and gaps in our knowledge. We will attain insight as to new points which require investigation – either to eliminate dissonances and close the gaps in our knowledge, or to push forward our existing comprehension. These systems will find for us the directions of scientific progress which will ensure optimality in the investment of mankind's time and energy resources. By devising this **social compass**, we will gain the power to strengthen the general fabric of human knowledge and to march it towards optimization of its consistency, coherency and significance, while performing a renewing dynamical discovery of the most *efficient* ways – time and money wise - to increase the scope and depth of science.

3. How We Think and Feel as Social Groups: *optimizing humanity through Social Informatics*

Looking from a different angle, we publish endless Tweets, status lines, blogs, talkbacks, news sites, spokesmen sites etc. but there is no publicly available intuitively graspable portrait of what we feel and think as the various social groups that we form;

Just as our trillions of individual cells function as parts of various physiological sub-systems collectively forming our physical body, so too, we as human beings will come to realize our individual fulfillment in serving as parts of a collective organism. We are already divided into complex, parallel and inter-connected social sub-systems; a human being is first and foremost an individual, but beyond that he can also belong to one or more social sub-systems which function via complex networks of mutual influences within the framework of the super-organism: We are separated into **geographical social networks** (e.g. cities), we interact through **cross-spatial social networks** (e.g. hobby forums); we form **ideological social networks** (e.g. religions) and inherit **cross-temporal social networks** (e.g. cultures).

After we learn to mathematically describe the interactions between our different social groups, it will become possible to observe the ways in which the different parts of humanity influence each other as well as the whole. We will know to characterize inherent human patterns that foretell negative events and so act to prevent them. Our understandings will also teach us how to improve the mutual dynamics between the different social systems active in the world, so to perform economic, environmental and cultural optimization.

4. Who Knows What is Happening in the World Right Now? - *generating succinct visualizations of all public online news and communications*

We must realize that only by dynamically monitoring and representing a wide variety of distorting mirrors will we be able to recruit the power of large numbers and the blessed human diversity so to winnow what we know from our subjective perceptions of knowledge; Only by wisely summing together the entirety of news sources into a united representation will it become possible to consolidate a lucid and objective an image as possible of the same world in which we all live. Our view of this world should ultimately average in as many perception types of reality as possible - from micro-blogs through commercial communication channels to governmental sites. Our mission is not only to aggregate news, but to synthesize news.

5. Humanity is Trying to Speak – Let's Listen: *creating a computational auditory faculty which continuously listens to the entirety of our online broadcasts, synthesizing similar contents into compact socially localized signals and feeds them back into the network.*

Bacteria have become the most survivable life-form known in existence mainly due to a natural implementation of Social Informatics; they unite to form colonies in which each individual can access the collective knowledge and experience held by all other individuals. Many of the colony's decisions which lead to increased survivability stem from the bacteria's capacity, as a whole, to successfully aggregate individual experience and knowledge into group decisions. It is our future that is calling us to learn from bacteria.

Humanity is already knocking on our door: **It is often the very statistics of the individual queries inputted into Google which serve as the required output to the individual users.** The Googles of tomorrow will enable humanity to beat together like a heart, to think together like a mind, to receive not only information about sites, but also real-time knowledge about the very thoughts and feelings of mankind, as portrayed online both by our queries (request for input) and our "tweets" (outputs) of all kinds. **We are all, individually and together, a balance between input and output.** Google should add a line for output, so that we can all, as our assumed online identities, both input and output information. This will make our Internet truly come alive.

Constructing a framework to detect and exhibit **emergent spontaneous collective communications** which convey similar content is only half the cycle; the other half requires that we actively allow a seamless platform for the public to listen in on these messages. In the smart synthesis of all these communications into compact representations lies a treasure of immense knowledge useful to all of us. By **performing advanced synthesis of many individually-biased contents into unified social signals** we can cancel out the biases to see more clearly what is happening in the world. These summative message-signals can be projected onto a World map so to aggregate, into a single public domain, a clear visual representation unifying the most basic strata in humanity – the individual – with the higher levels of our complexity as a collective socially-integrated organism.

6. Privacy Issues and the Power of Publicity: *creating a better, healthier balance between the governments and peoples of the World*

When considering the implications of projecting synthesized social thinking processes onto a public domain, we find the seemingly dangerous risk of allowing tyrannical governments or ill-willed organizations to misuse knowledge regarding emerging oppositional contents within the network. When, however, one truly grasps the meaning of global transparency, it becomes apparent that total

public awareness will lead to new, better global dynamics; Just as crimes become less likely to occur where more witnesses are present, so too a global transparent political debate will make it much harder for despotic rulers to secretly crush all opposition.

Further, what makes information socially-relevant is primarily the fact that it does not relate in a uniquely-identifiable manner to any single individual, but rather that it is relevant in a non-personal manner to a significant group of individuals. In fact, it will be the very publicity of the knowledge generated from our social data that will **create a new balance, beautiful and healthy like never before, between the governments and peoples of the World**; Social Informatics will finally take us forward in our journey towards true Democracy. Reciprocally, we can use the knowledge attained through Social Informatics to empower our officials by providing them with the tools to make decisions based on a collective real-time globally-shared social-information reference framework.

As for privacy boundaries, we will gradually accept that our times are changing: if millions of people are suddenly asking what happened to Michael Jackson, even though their queries are in essence personally-identifiable, it is statistically probable that the strength of the phenomenon indicates that this is not a personal but rather a public event. Moreover, a "private" individual who decides to write a blog is actively taking on a public identity. We must realize that we ourselves, through the ways in which we choose to communicate, are classifying what is personal and what is public. **We are actively and dynamically defining the private and public realms of our reality.**

7. Modeling and Predicting Social Dynamics – from wars to social weather: *empirical detection, modeling and prediction of patterns pertaining to social processes.*

If we learn how to monitor and mathematically represent all of the social signals we create, starting from the public expressions of our leaders, through the declarations and decisions of governments and organizations, through the publications of individual citizens (in blogs, status lines etc.), to the published content in news sites from around the globe – we can attribute an energy, a vector of attributes to each such social signal. By translating monitored social phenomena to mathematical representation we can begin to discover, through observation, the models and patterns which govern human social processes on all scales. For example, by monitoring these online social signals we can **predict social storms** by detecting patterns characteristic of belligerence build-up.

Furthermore, we can enhance our understanding of social dynamics by performing **"microscopic" studies into the atomic essences of social phenomena**. Using wide-angle video cameras mounted on small hot-air balloons we can attain air-borne footage of social arenas (e.g. metropolises, stadiums, roads, festivals), extract vectors of motion and analyze the dynamics of social processes. **We can thus begin to unravel the harmonies, dissonances, energetic efficiencies and mathematical optimizations characterizing different ways of life.**

Moreover, by monitoring the dynamics of invitations and RSVPs in Facebook events while cross-correlating them to the contents represented by the event, we can gain immense insight on the mathematics and physics governing the winds of social interest, as well as the formation, movement and dynamics of social impact clouds. We can thus attain a genuine working model of **social weather**, allowing us to decipher and predict social processes: we will understand how the winds of ideas and causes flow and how the clouds of social impact form, change, and storm. By unveiling the formation patterns and movement dynamics of these winds and clouds we can attain the potential to begin the exercise of a collective conscious free will in shaping the personality of mankind.

We will witness how an economy of thought is taking place within humanity, amongst the various social sub-systems. We will behold the dynamics governing the interchange of ideas between individuals. We shall comprehend the ways in which dominant notions, norms, values and ideals build

up from within the social sub-systems of humanity, and understand how the exchange of these heavy bases takes place in the master's chemistry of social groups. We will grasp the mathematics of how private individuals rise to social popularity, how citizens rise to fame or amass political credit and how organizations gain and lose reputation.

8. Social Differentiation en Route to Global Economic Optimization: *inducing a collective synergy in energetic efficiency for humanity*

Only by learning how to work together while appreciating the importance of our innate differences can we attain the savvy to perform economic optimization. The variance between the multitude of social clusters we are continuously dividing and uniting into is no less than holy; it serves a crucial foundation for our survival, as it will enable us to ultimately differentiate and cooperate, just as the cells in our body have found necessary in their struggle to exist.

Our physiological body is in fact a brilliant solution to an energetic optimization problem very similar in nature to that which mankind as a whole is facing today. Ultimately, out of the strive to reach optimization in the distribution of resources as well as in the energetic management in facing the environment, our cells found it crucial to take form as differentiated groups (i.e. physiological sub-systems) and to assign these groupings with various complementing roles (e.g. liver, pancreas etc). By letting each entity focus on what it naturally knows to do in the relatively highest competence, the unified organism is able to attain synergy in respect to energetic efficiency, thus substantially increasing the survivability of both the individual entities and the whole.

Have no doubt; just as our cells form a body, so too **there is an economic bingo in respect to our abilities as a whole humanity made up of uniquely variant parts**. By employing such a model of excellence, based on a public and transparent analysis, the entirety of our social sub-systems (from professional unions to entire peoples) can decide in communion to differentiate into a wide spectrum of functionalists and to agree upon a distribution of roles so to achieve synergy in the economic optimization of both the whole and its parts.

By looking at the same picture, we can all come to mutual understandings leading to greater personal gains. We can harness Social Informatics to develop the computational ability to build models of collective income – for humanity as a whole - so to predict which new manufacturing branches and business domains can potentially provide mankind with profit. We will then be empowered to optimize humanity's manufacturing branches by scientifically prescribing the finest blend of all the different forms in which social sub-systems should come together to provide services (material or intangible) for one another.

By developing the tools of Social Informatics we can build a computerized observatory monitoring the becoming of the human organism with respect to both economic-energetic-efficiency and the quality of rendered services, on all levels and in all scales, from the micro to the macro. We can then use our probing abilities to map out a complete model of our economic network and begin to scientifically optimize it.

In our quest for economic optimization, we shall require to learn, on all levels of our organism, a very important life lesson: **Just as our bodily cells already know, the secret is in finding a balanced diet between consuming resources and giving service.** In fact, **the balance between the will to receive and the will to give is the secret of all secrets of an organism's health.** We must develop the scientific tools to allow us to measure the efficiency of the recycling of resources on all levels of consumption within the human organism – from food products, through technological products and the packaging of our manufactured services, to heavy machinery and so on.

Furthermore, our journey will lead us to develop Social Informatics tools for monitoring and modeling, in real-time fashion, the mutual dynamics between the numerous economic bodies in the world. It will then be possible to dynamically locate sites of imbalance in the system – not only of unhealthy lack in resources, but also of unhealthy excess: We all make up a single structure. We must remember that if the bow rises too much in respect to the stern, the entire ship may sink to oblivion. We are sailing these oceans of life one in the hands of another, one with the help of another, *all in all*; we must recognize that in this game we can either win together or lose together. The choice is ours.

Social Informatics will enable us to clearly perceive our already-existing inter-dependence and to open our eyes once and for all to the big picture: We, human beings, are a one species. Only by striving towards a scientific comprehension and catalysis of our becoming as a living, breathing whole – an organism by all definitions – can we develop the solutions to allow us a steady state existence on this small planet, in harmony amongst ourselves and with our environment.

Let us choose to win together, and march towards a future where mankind is united as a whole made up of unique individuals; Our power is in unity, and the secret of our unity is in grasping the potential of our variance.

This is not a preaching to annul the personal, individual interests of people, countries and organizations, but on the contrary: this is a call to lay the scientific foundations to allow for the possibility, for the first time in history, to represent how this wonderful mosaic of interests called humanity looks like from an integrated, unified perspective. These new tools will march us towards a future where we discover how our fabric of interests and needs as individuals blends in harmony into a single beautiful picture.

These new scientific tools will allow us, for example, to connect between sources of finance - people and organizations looking to invest money in commercial, academic and philanthropic endeavors - and sources of vision holding ideas and the ability to convert money into revenues.

The new science of Social Informatics will facilitate us with new understandings of how to close the loop between the wills of one group and the needs of another, between "our" abilities and "their" abilities. This discipline will grant us discoveries of how differences alone are the basis for unity: Seeing the big picture we shall realize that our needs - our different wants - complete each other, that **if we look from high enough above, we can recognize how to guide the broad arch of our various abilities and aspirations so to rejoin ourselves in completion as an enormous balanced circle of mutuality and sustainable symbiosis.**

By accepting our differences and sanctifying our variance we can allow all individuals amongst us to strive for their own personal greatness. Furthermore, the scientific understanding of the social interactions between us will be key in fulfilling our freedom as a collective to choose our future. The scientific journey of Social Informatics will grant us the tools to connect between the aspirations of the parts and the enhancement of the whole, between the private pinnacles of individual humans and the global apex of the organism which is humanity.

9. Global Bio-Feedback: *seamless feeding of synthesized social knowledge back into humanity's public domain as the point of emergence for mankind's next evolution*

For Social Informatics to fulfill its destiny it will gradually be required to produce more and more knowledge from public information. Furthermore, if Social Informatics is to create our promised tomorrow, one of human unity, we must regularly communicate its findings with the public. It is very important to emphasize that the tools of SI will not be efficient without closing the loop of seamlessly feeding the findings back to the public from which they were generated. When knowledge becomes

public and is communicated all across the human organism, it takes shape as a balance-promoting factor of the whole

The entire point of emergence is based on releasing users from the need to manually synthesize coherent social knowledge from the plethora of individual online communications. In this future, it does not matter in which forum, blog or status line you are discussing basketball, religion or politics, because from wherever in the net you decide to talk about any given subject, the system picks you up and aggregates you into the respective synthesized view of the world; "we are all listening, just talk". Imagine what this will do to our online discussions; Total ignition. By enabling a medium through which similar content on the web can automatically find itself, link and aggregate, we will emerge a new age for humanity, Let us find ourselves.

10. On social justice, equality and freedom:

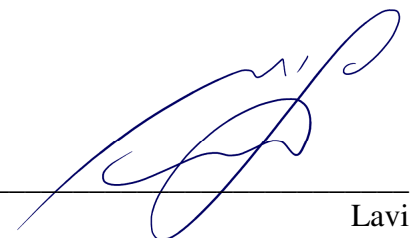
The computerized systems of Social Informatics will be distributed across the globe; no single entity will hold a veto power over the unified knowledge base and no single organization or body will hold the entirety of information or its resulting knowledge. Here too, the communal property will act as a crucial foundation in the physiology of social knowledge, and will thus compel SI systems to exist from birth and forever in the public space. These systems will be dependent from their very core on the in-betweens of all the social sub-systems in the world, and not on any single one of them exclusively.

The time is now, the way is science, the direction is Social Informatics, and the work is aplenty. As we pave the road to Eden, our tomorrow awaits. It is calling us to unite.

Under well be skies, from leaves of merchants sailing down, we all but slip away as dreams depart our shores, from hopes to sea from dawn to dusk, we go marching on.

Sincerely,

And with great hope,



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