

# KREYON - Unfolding the dynamics of creativity, novelties and innovation

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The project is proposing for the first time a unitary approach where creativity and innovation are seen as two sides of the same coin and jointly investigated and modeled. In doing this it exploits the extraordinary alignment of three circumstances:

**The ability to monitor, quantify and model human behaviors at unprecedented levels of resolution and scale**, unleashed by the planetary-scale adoption of the World Wide Web, mobile communication technologies, e-commerce systems, and on-line social networks. The possibility to access to digital fingerprints of individuals is opening tremendous avenues for an unprecedented monitoring at a "microscopic level" of collective phenomena involving human beings. We are moving very fast towards a sort of tomography of our societies, with a key contribution of people acting as data gathering "sensors".

**The opportunities web-gaming and social computation are offering to the emergence of new forms of participation arising from the interplay of ICT services and communities of citizens.** In the last few years the Web has been progressively acquiring the status of an infrastructure for social computing that allows researchers to coordinate the cognitive abilities of users in online communities, and to suggest how to steer the collective action towards predefined goals. This general trend is also triggering the adoption of web-games as a very interesting laboratory to run experiments in the social-sciences and whenever the peculiar human computation abilities are crucially required for research purposes.

**The maturity of complex systems and data science applied to socio-technical systems.** The theoretical and modeling tools recently developed by physicists, mathematicians, computer and social scientists to analyse, interpret and visualize complex data sets have reached the maturity to effectively address the challenges of our era.

The concurrence of all these elements is opening tremendous opportunities towards an understanding of the complexity of our societies, with the final goal of deploying human imagination for the betterment of our communities and even civilization. This project aims at timely leveraging these possibilities to investigate creativity and innovation processes in a quantitative way by blending in a unique ambitious project data-science, web-based experiments and theoretical modeling. Building on these three pillars, the project promises to construct a quantitative framework through which important questions could be raised, refined, polished and eventually answered. We expect, in this way, to trigger a revamped interest of the scientific community and the society at large towards a systematic and quantitative approach to creativity and innovation.