

Self-Orientation : birth and deployment of the topology of functions in a collective

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Abstract— This work deals with the evolution of X-Research Group. This organization is described in terms of executive functions. Scientific conference development is correlated to the way functions are distributed to the active members. That task is assumed by the president who has to understand the mechanism of the project and to respect the status. Constitution of a solid core goes through the communication to structure identity and transmission to members. Management is operational. Work and objectives of participants are clearly defined. Procedures are written. Process is engaged and repeated. Self-Orientation is functioning.

Keyword: *self-orientation, management, b-bble, process, innovation, complex system, creation, transmission.*

I. FOUNDATIONS

X-Research Group was created in June 18th 2009 among the “Association of Former Polytechnic School Graduates” called AX. The purpose of this association between Research and the rest of the world is to inform the audience on scientific themes and to promote training with research skills.

The bureau is composed with a President, a treasurer and a general secretary. Those members are elected for two years during a general assembly with total renewal at term. The bureau is free to impose a subscription and its amount. Each member can be re elected except the President who can be elected only once. A manager is in charge for each action.

The group is open to every polytechnician students and engineers and every person graduated from Polytechnic School through a demand to the Bureau and the payment of the annual fees. Members of AX must be represented in majority. The President has to be a member of AX.

Non polytechnician community members can be accepted as long as members of AX are in majority. At least ten members contributors of AX must be in the group.

The group organizes reunions, debates, conferences where personalities are invited. **X-Research** Group. cannot have political or religious opinions. No commercial or lucrative activities are allowed. Reports of events or reflection works can be diffused to members. A summary can be published in “La Jaune et la Rouge” revue. An authorization by AX council must be produced to plan interventions outside AX. X-Research cannot represent AX or give an opinion using its name.

This paper describes two dimensions in the evolution of “X-Research Group”: the definition of identity by the variation of

topology of functions and consequently the type of events produced.

II. INITIAL CONDITIONS

In the following the functions available to achieve a conference are defined. Firstly, there are three fundamentals to guaranty the occurrence of an event: definition of a subject, constraints, communication to the members. In the figures below these tasks are underlined. Defining the subject means finding speakers and agreeing on the main topics. The constraints are the scheduling of the event and the reservation of the amphitheater. X-Research produces conferences for members so those have to be informed. Secondly, some services are offered to make the group more attractive: reporting and blogging. The reporting of the scientific event is written by the project leader and approved by the speakers. Reporting implies the recuperation of the presentation and sometimes the sound recording. The blog is interesting for two reasons: it works like a newsletter to get informed about the current events and it is also used as a database to download the files using a password. Finally, external communication is a way for the association to be known outside the community of members. Three functions correspond to this item: external communication, graphic creation, Linked In. External communication is made to labs in Polytechnic School, associations, former speakers. Graphic creation is an internal skill developed to create posters and logos. Linked In is used for the discussion on the events.

The formation and development of the active core can be schematized. On the figures on column a, the dotted lines around one or several functions include the charge of one active member. The roles are: president, secretary, treasurer, communication, blog, linked in, project leader. They are written on the figures. If not, they are named as the function. On column b, the production of conferences is traced and categorized by topic.

III. ENGINEERING : DISCOVERY OF THE MECHANICS AND THE EFFECTS

A. Creation (Embryo)

On the first figure the group is an embryo. All the functions presented above are mentioned. They are potentiated in X-Research Group (yellow surface with blue boundary). No clear functioning is defined. The machine was operated. Two events emerged: Quantum theory and Human Sciences and Research: training for which job? Epistemology and valorization of training through Research were the centers of interest. They seemed to be the preoccupation of a young collective who had the possibility to plan an event. Then, the success of these events enhanced the motivation to develop more. So it became important to learn how the machine works : finding the links between these functions and activating them as a mechanic.

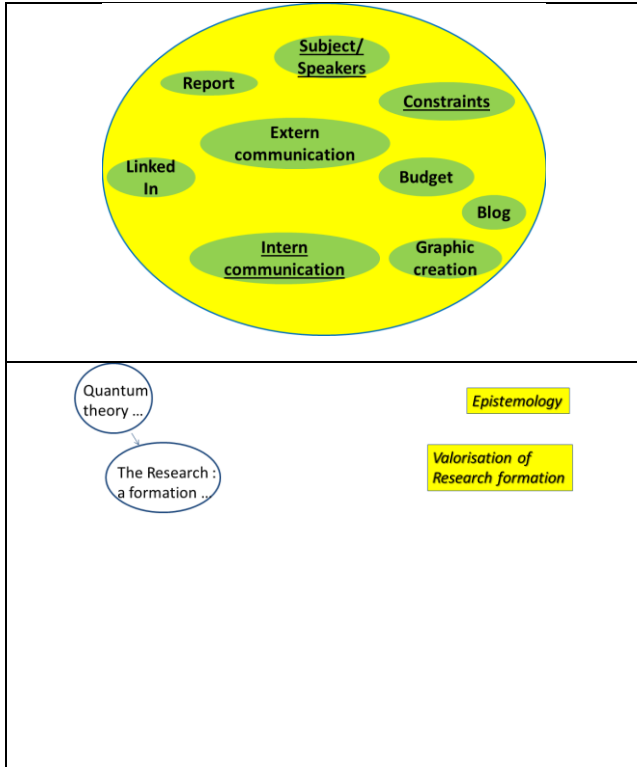


TABLE I. Creation (Embryo)

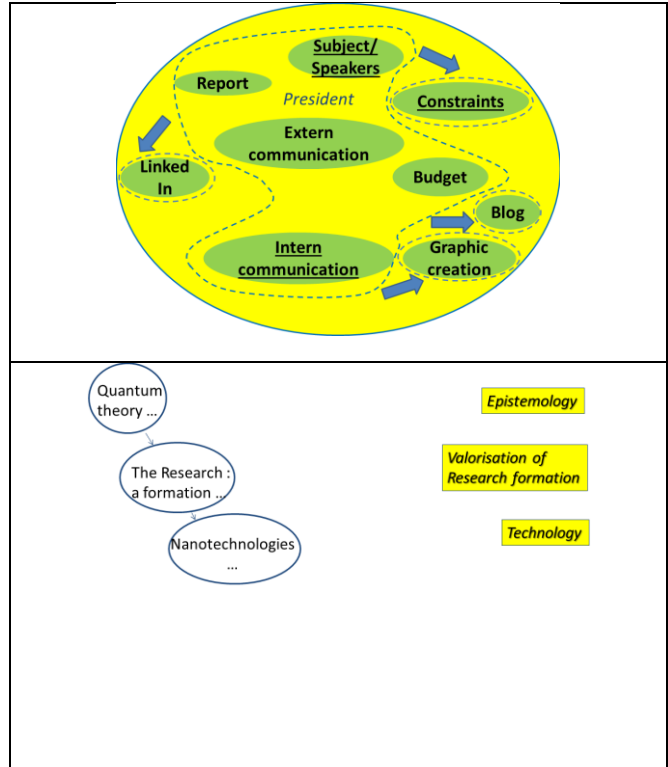


TABLE II. Learning (Cocoon)

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The president concentrates a maximum of functions and manages the staff (Table II). It became important to enter upon scientific events for a wider audience. A big project was achieved: four speakers who are concerned by the technologic theme “Nanotechnology : benefits and risks?” A reunion of a physician, a philosopher, an expert in nano medicine and an ecotoxicologist confirmed the success. Inside the organization, the cocoon state was over and announced the birth of the chrysalides.

C. Transmission (Chrysalides)

It was time to integrate new members (Table III). The main points were transmitted to the two colleagues who would be important in the future. They played the role of project leaders. Those two Phd students chose to explore the question of “Entrepreneurship: From the idea to business-start”. They understood quickly how to work in the organization and assumed respectively two roles: secretary dedicated to the constraints and scheduling, and treasurer for financial flux. The system was tested. A member of X-Research Group was proposed to develop the future event: “The conversion of solar energy” a technologic topic .It helped consolidating the roles. It was a success too. The machine seems to be oiled.

Requirements to finalize events were understood so that it was possible to have them applied to two members for one event first and then to another member using their knowledge for a second conference [1].

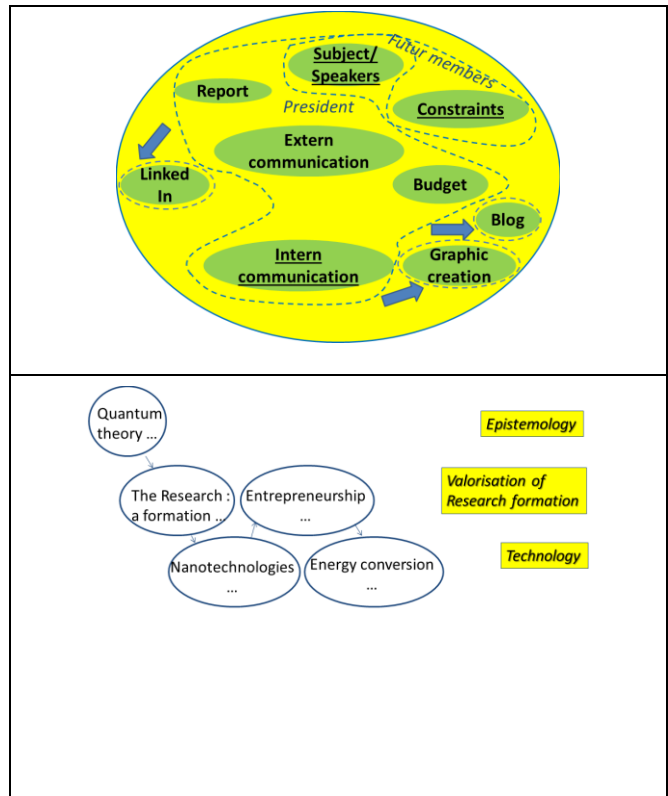


TABLE III. Transmission (Chrysalides)

D. Test of the system (First perturbation)

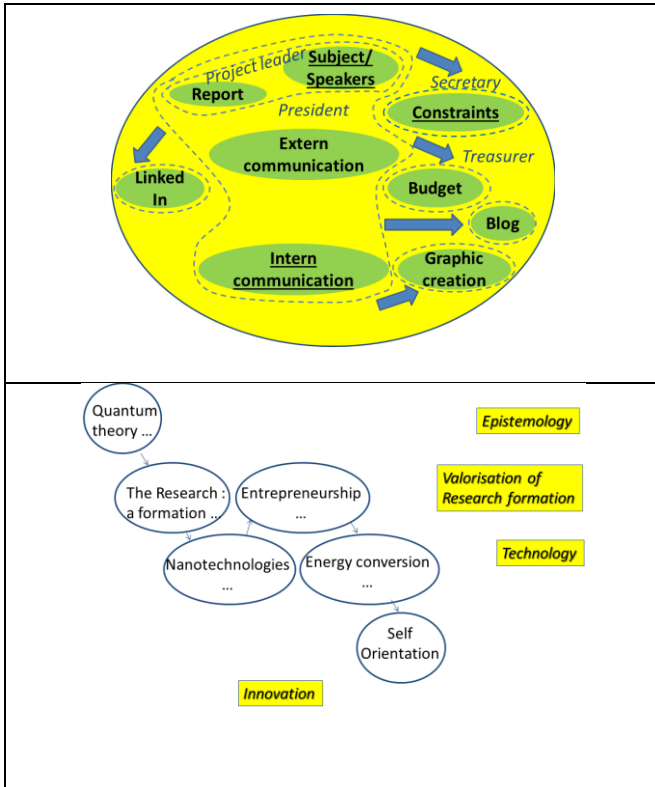


TABLE IV. Test of the system (first perturbation)

Then we had to face the first perturbation: the organization of the Auto Orientation Workshop [2]. We had to open a bank account and realized that the management is not simple. A day of heteroclite presentation was organized. It was the emergence of Innovation Theme.

A reaction in the management had to be operated (Table IV). It was time to remember and to write the procedures so far. X-Research realized that it had to have its own money.

E. Mechanic of the group

The feedback of these 18 months enforced the obligation to write a list of action for each member and to make them sign a document. A mechanics was engaged (Table V). The president had to write function forms for active members to organize the development of the events on the bases of the work already done and to control internal life. Internal life mean request of membership, diffusion of news, and information of members ... Its second role became to make sure that the global project and internal life procedures and also the status were respected. Then prospective of project and new collaborations were taken into account. The association acted in relation with the environment and like an alive body: active members were at the interface between the expectations of group and the environment.

Procedures are known and accepted by every active member [3]. The president pilots the staff. Three departments give a new rhythm to the group: internal life, project and the blog. It is easier to face the environment.

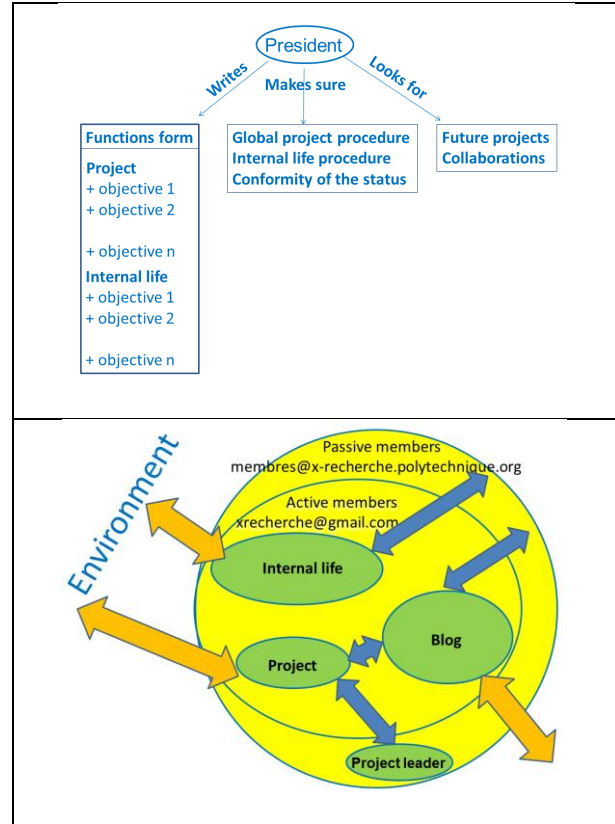


TABLE V. Mechanic of the group

F. Process and Self-Orientation

The collective work was accepted and X-Research applied its procedures: 3 conferences in 5 months (Table VI) were created on Innovation topic: “How to think about innovation”, “Levers of innovation“, “Innovation, conscience and creation of global values”.

Members of the group feel free to propose new subjects. The project leader of the first conference was a phd student. Among the two speakers who both belong to X-Research, one was a phd student too. This event represented **his vision of X-Research**.

Then the second project was developed by a more experimented person who chose to develop it and to make a presentation with a partner. It was a very technical conference proposed by professionals who furnished lots of references on their subject.

Finally the third event was singular. For the first time the human was considered in its ecosystem and taken into account in a presentation of the group. An application was proposed after the event to take consciousness of one and the environment.

X-Research became a factory which produces conferences.

Now the group is diminished: blog and Linked In were given up. The corresponding functions are being redistributed and taken in charge.

X-Research evolves in self-orientation with 60 members including 4 active members (Table VII).

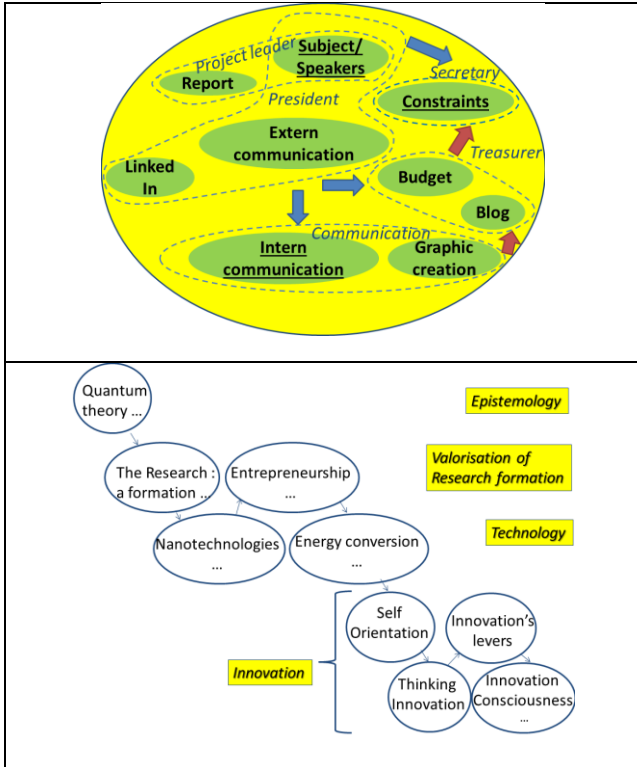


TABLE VI. Process

G. References

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[2]: Self Orientation Workshop (2011), Ecole Polytechnique <http://x-recherche.polytechnique.org/post/Appel-%C3%A0-communication-%3A-Colloque-%E2%80%98Auto-Orientation%E2%80%99>

[3]: Charles H. Green (2007), Trust in Business : The Core Concepts