



Centrale-Santé:

The Professional Healthcare and biotech Think Tank
Professional Group Centrale Alumni Association

Centrale-Santé Presentation
2010

Centrale-Santé at a glance

- The open “Professional group” of the Centrale Alumni Association (19 000 members, established in 1862, and declared of public interest in 1867).
- First open and independent « Think Tank » in France established in 1996 offering an original associative answer to the 21st century innovation challenges in the healthcare field.
- A 2 500 members network, with only 30% Centrale Alumni, gathering all the competencies, and expertises in the Technology and biotech universe. A distribution list of 5 000 people who are linked to us and are informed of our work and programs.
- The promoter of the opening and industrialization of the healthcare and biotechnology sector through its proposals and projects
- The promoter of the Healthcare and Biotech Educational Center at Ecole Centrale Paris.
- An open-minded network interconnected with the major actors of the sector.
- An access gate to international networks through Alliances

Centrale-Santé Missions

- To create, within the Centrale Alumni Association, a favorable environment for meetings, exchanges and general interest works between MDs, scientists, engineers and every participant involved in the Healthcare Biotech sector that lead to:
 - The set up of Educational programs
 - The creation of Events to share our vision
 - Specific networks
 - Favor economically viable activities proving the pertinence of our recommendations
- To contribute towards opening the Healthcare Biotech sector to competences and approaches which have proved their efficiency in other industrial sectors.
- To favor a responsible and sustainable industrialization of the Healthcare Biotech sector at the service of the patient.
- To stimulate the creation of multidisciplinary teaching and research applied teams.
- Support the creation of start ups and operational networks to prove that our concepts, approaches, recommendations lead to real industry breakthroughs.

Centrale-Santé: the integrated approach of healthcare issues

Three complementary approaches

- Healthcare engineering : the pivot concept of Centrale-Santé. Create and adapt engineering and project management concepts to new healthcare organizations (networks and activity centers). Transfer of engineering approaches to improve healthcare quality in a difficult economic and social context.
- Biotechnologies and Biomedical Technologies : From market expectations to industrialization. Identify, develop, and transfer technology and applications that will have to be adapted to the medical field and financed.
- Health-Environment : favoring Prevention and Hygiene and Security, often left aside. Identify and measure the impact of the environment on people's health and well-being.

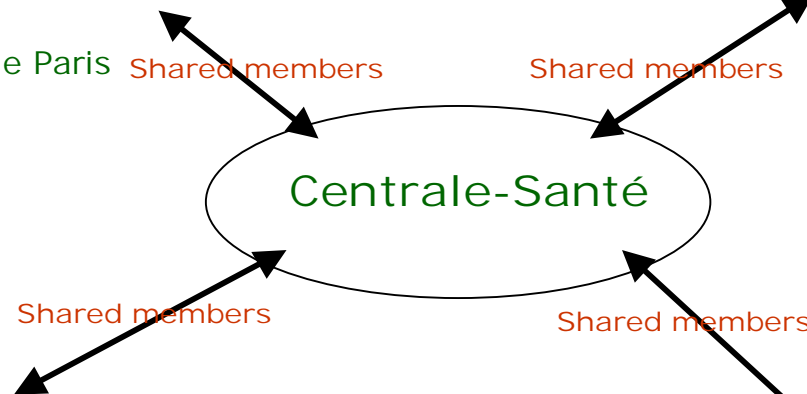
Centrale-Santé : the Interconnected Network

Academic

- National Academy of Medicine
- National Academy of Pharmacy (under process)
- Foundation for Medical Research
- Inserm
- Ecole Centrale Paris

Pharma & Biotech Industry Associations

- Leem: Pharma Industry in France Association
- Pharma-Biotech: BioPharma Association (Amgen, Biogen-Idec, Sérono, Actelion, Gilead, Bio-Modeling Systems,)
- Organibio (Biotech Association)
- Alfa club
- Adebiochem Committee
- Organibio
- Industry managers
- Competitive clusters



Civil Society

- Other Graduate School Alumni Associations
- BioVison Network
- Medec : Leading pharmaceutical en medical event
- Patient Associations

Administration

- Ministry of Industry
- Ministry of Research

Centrale-Santé

The steering Committee

- Manuel GEA (ECP, DEA sociology) : Founding Chairman, Strategy and Alliances,.
- Dr Vincent LEROUX (M.D., IHEDN) : Founding Vice-Chairman, Risk Management expertise center. Teacher at ECP.
- Michel DAIGNE (ECP) : Founding Vice-Chairman, in charge of Health Engineering Center. Teacher at ECP.
- Dr Gérard DINE (M.D., Biologist) : Vice-Chairman, in charge of the Biotechnologies and Technology Transfer expertise group. Teacher at ECP.
- François IRIS (PhD: Geneticist, Biologist, Biochemist) : Vice-Chairman, Integrative Biology expertise group, 4th Generation Biotechnologies Development.
- Pablo SANTAMARIA (ECP) : Vice-Chairman, NICT, Observatory Ethics and Societies expertise group.
- Paul-Henri LAMPE (ECL-ECP): In charge of NICT, Webmaster
- Nicole PRIOLLAUD (Science Po) : Founder, Communication and Press Relations.
- All the members belong to numerous networks and participate to educational programs in various institutions

Centrale-Santé Activities

Norms, Methods, Studies:

- Netscoring Healthcare (1998).
- Grid healthcare / work security (1999).
- The hospital property patrimony (1999).
- The 4th generation biotechnologie program (2001)

Educational and network Events :

- First “transversal” healthcare and biotech educational program at Ecole Centrale Paris (French equivalent to MIT) (2001)
- BioMedec in partnership with the French National Academy of Medicine at the Medec (annual since 2000).
- Profession : Bio-Entrepreneur within the Medec (see specific paper) (annual since 2002).
- Workgroup Biotechnologies in the European Event on Technology (2000-2002).
- The Healthcare Engineering day (2004)

Initiatives :

- Through its founder participation, founding member of the Leem Biotech Committee in order to implement, at the industrial level, Centrale-Santé vision (2003)
- 19th Commission (technology and biomedical, 2000) of the French National Academy of Medicine.
- Co-founding of the Paris Biotech Incubator (1999).
- Clinical observatory of pathological Fatigue (1998-2000).
- Contribution to the creation of Medicen cluster (2006)
- Contribution to the creation of the health group of Advancity (territory, cities) cluster (2009)

Centrale-Santé Case study1:

Profession: Bio-Entrepreneur Colloquia:

Context in 2001:

- The French biotech industry is underdeveloped and the rare companies are collapsing or about to collapse.
- The biotech sector needs competencies present in other sectors
- The Pharma industry is not involved in the rational development of the biotech industry in France.
- Venture Capitalists and scientists promote product based biotech companies while the Pharma industry is looking for service based companies.

Centrale-Santé proposal:

- Transfer the “car industry” business model to the Biotech Pharma sector.
- The pharma industry has to organize and support the development of a service based subcontractors network of biotech companies. It is the only industry in this sector with the power and the means to convince all the key actors to work together.
- Open for the first time the biotech sector to the competences from the other sectors.

Implementation:

- Launch, with the support of the Centrale-Santé’s network of a colloquia within the most important medical and pharmaceutical event in France that:
 - Is free for all participants (first and unique)
 - Inform professionals of all sectors of interest that biotech companies need them
 - Open the colloquia to international presentations of biotech countries (Canada, Japan, Switzerland...)
- Participate to the creation within the Leem (Pharma Association in France) of the biotech committee which, through collaborations with the biotech organizations promotes and convinces the industry and government of the necessity to support these programs.
- Favor and organize the synergies between biotech and Pharma.

Centrale-Santé Case study 2

Integrative biology as a new paradigm in the product development process

Context in 1998:

- The development cost of a new drug is now reaching more than 1 billion US \$
- The healthcare systems will not be able to pay for the innovation in the develop countries.
- The untreatable diseases especially in the developing countries will not be solved with the existing tools and approaches still based on wrong bases.
- Why using Cartesians approaches when we know that life is not a linear nor a predictive process.
- Why increase productivity of the discovery technologies when the bottlenecks are in clinical trail phases.

Centrale-Santé key questions:

- How to switch from a symptomatic medicine approach to a causal medicine approach in order to address the mechanisms and not the symptoms of a disease to cure the patient.
- How to switch from random linear drug discovery processes to non linear integrative processes describing the mechanism at work in the pathologies
- Remark: It is easier to do something when you understand what you are doing. But we DO NOT need to know everything to start working!

Centrale-Santé "4th generation biotech" program (2000):

- Launch of academic collaborative work based on the "negative selection processes" invented by Dr. François Iris, VP of Centrale-Santé.
- Identification and recruitment of integrative biology experts
- Creation of integrated teams to investigate what is not feasible
- Success of the approach and first validations in the context of academic work already published.
- Introduction of this new paradigm to develop the next generations of tools and launch of programs to enlarge the usage of these approaches in order to increase the success rate of the industry.

Interesting links

- Centrale Alumni Association
website: www.centraliens.net
- Centrale-Sante website: www.centrale-sante.net
- Profession: Bio-Entrepreneur colloquia
website: www.bio-entrepreneur.net
- Ecole Centrale Paris web site: www.ecp.fr
- French National Medicine Academia website:
www.academie-medecine.org