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Donnons un sens à l'innovation

Interactions

LES DOSSIERS

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UTC's hall of fame

The prime need for flexibility and stamina

Christophe Rosset, graduated from UTC in 1987, is the Managing Director (Continental Europe) for Page Executive

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FROM THE PRESIDENT'S DESK

Forward to a new UTC development model?

The conclusions of this year's International Innovation Summit, on the theme "Digital Metamorphosis of Territories" which we hosted, Nov.27-28, in Compiegne, point clearly to the establishment of a new space for thought, which would rely on the implementation of 3 principles that could be used to counter the threats associated with the digital revolution: Contribution, Regulation and Enaction.

From this point of view, given that digital metamorphosis is only one of the components of the far-reaching changes we witness and experience today, UTC is now committed – on the basis of its institutional project, viz., "To become a European University of Technology, rooted in a local ecosystem of innovation and creativity" – to engage on a wide-ranging study for a new development model that will integrate a number of constraints and challenges, but also including opportunities and motivations: economic constraints, indirect financial support via the partnership arrangements (ITE, IRT, COMUE …), the challenges specific to the digital world and innovation (a mission already strongly embedded in UTC), international competition, providing for formal, simple recognition of some of UTC's historic positions (employment of contract staff, specific training schemes, encouragement for entrepreneurship …), Government incentives and reinforced site-intensive policies … and studies like these cannot forego having to make a qualitative and quantitative approach to development of financial support for the universities of technology (UTs), both in France and abroad and for the Group of UTs (the smallest in France!). Nor will this rule out debate and decisions about our curricula and training packages (engineers, masters, PhDs, apprenticeship, via continued education and the positioning of the university with respect to technology at large; nor again can UTC avoid having to think about its internal governance and organization which probably are no longer adapted to our academic, economic and social environment, or to the ongoing changes in our urban surroundings and region. Our University must implement and accompany those cultural, structural and operations evolutions needed to ensure a harmonious integration of the Innovation mission into the core structure of UTC … This will be the price to pay to see the University of Technology of Compiegne preserve its specific heritage and avant-gardist spirit in a deeply changing university scene, based as they are on 5 values: Creativity, Humanism, Inter-Cultural Relationships, Co-operation and Daring!

As we prepare to move to yet another New Year, allow me to invite you to share with me these values that form the rock-base on which the development of our University lies and let me wish you all an excellent Xmas break, with your families and friends and a prosperous and rewarding New Year 2015! ■

Prof. Alain Storck
President and Vice-Chancellor UTC

Prof. Alain Storck elected to Chair the Board of the InnovENT-E Association

Monday November 24, 2014; the InnovENT-E Association was officially established, at the Upper Normandy Regional Buildings, in the presence notably of Ms Geneviève Fioraso, Minister for Higher Education and Research, Mathias Feki, Minister for Foreign Trade and the promotion of Tourism and for the French citizens abroad and Prof. Alain Storck, President and Vice-Chancellor of UTC. During this ceremony and inaugural meeting, the Assembly of the Association elected Prof Storck as Chair of the Board. ■

48h to develop Innovation in the SMEs

Nov. 21-22, UTC participated for the first time in the 48h® operation, 2014 to present ideas, an event organized in the framework of InnoVENT-E's dynamics. For two days, the teams, each comprising approx. 10 students from UTC and from ESCOM who accept to study a subject proposed by an enterprise and with the aim to come up with an innovative proposals. The 48h® event mainly aims at facilitation more open views to innovation processes and deployment in enterprises, and in particular in the SMEs. The event also initiates students to use the tools and methods that help stimulation of creativity. ■

http://webtv.utc.fr/watch_video.php?v=MU9WWO5UXWRB

Louis Schweitzer, Godfather to the 2014 class graduation ceremonies

The Ceremony for the Degree Awards 2014 took place Saturday Nov. 22, 2014 at Compiegne's Jean Legendre Hall and the Imperial Palace. Godfather, Louis Schweitzer reminds the graduates of the importance they should attribute to taking risks and to working in teams. Appointed Commissioner General for Investment since April 23 (decision taken at the Council of Ministers), Louis Schweitzer is also President of Initiatives de France, a network of associations in activity since May 2011 that can decide loans and accompany entrepreneurial start-ups. Louis Schweitzer was CEO of Renault Automobile Group from 1992-2005 ■

http://webtv.utc.fr/videos.php?cat=59&sort=most_recent&time=all_time&seo_cat_name=

ECOSYSTEM

The UTC Foundation
serving the development of the University

Jacques Pinget, head of the impending UTC Foundation, gives Interactions readers an update, adding by way of an introduction that "We wish to accompany the development of the University, by setting up new forms of partnership in the framework of the Foundations' missions".

"If we already are assured of numerous sources of financial support, they are pre-assigned to precise objectives (research projects, continuous education, ...). We hope to be able to set up a structure that will associate enterprises and UTC closely, so as to contribute in a more global manner to the growth pattern of the University. The model we have chosen is that of the Foundations of certain US universities, some of which are quite historic and who hold capital funds the interests of which alone allow the institutions to acquire new equipment, to erect new buildings and to pilot projects which are sometimes only indirectly related to research" underscores Jacques Pinget who joined UTC in September 2014. He has already set in motion a working party to define better the ambitions assigned to the UTC Foundation (on the basis of a previous study carried out in 2013). The objective is to convince enterprises that they should join the Foundation.

A true partnership logic"

Since Government passed the bill (2007) granting autonomy to French universities, the latter are empowered to establish foundations, viz., private law structures with a minimum capital of 15 000 euros and with a Board that comprises both enterprise and university representatives. "Enterprise can even me in a majority position, in a true partnership logic", notes Jacques Pinget, who is proposing that corporate structures historically close to UTC could become members of this Board. "Certain companies may be attracted by the strong local anchorage of UTC, and could contribute via the Foundation to the Region's economic dynamic development and its attractiveness. Others may see a way to valorise their legal, societal responsibilities (RSE), and yet others can see a way to approach the excellence of academic research and the Inter-UT network, by sponsoring university corporate chairs and creating closer ties with the training courses at UTC", adds Jacques Pinget. The first partner in the Foundation should be selected in the first semester 2015 and the Foundation will count some 4 or 5 companies when it is formally launched. "My initial contacts are promising! UTC has no need to prove to potential candidates its academic excellence in both training and research", explains Jacques Pinget, who coordinates both the pre-launch studies for the Foundation and the UTC-DSEI (directorate for Corporate Strategy and Innovation). In this 'one-stop' logic, he is in a position to orient his contacts towards the most relevant partnership solutions, bearing in mind both UTC and the entrepreneurial needs. ■

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SORBONNE UNIVERSITIES

A new institute aimed at bringing health and engineering closer
supported by the Sorbonne-Universities cluster

The project resulted from two years' preparatory work. The University Institute for Health Sector engineering (IUIS), a joint initiative of UTC, UPMC (University Paris 6, Pierre & Marie Curie) will facilitate innovation in the medical infrastructure and equipment a d the health care circuit; it has been designed to bring the worlds of engineering and medical practitioners closer. Its base will be the Pitié-Salpêtrière Hospital group, already closely tied to UPMC and to the experience UTC has gained through its 'barrier breaking' policies.

The mission assigned to the Institute will be to bring the engineering teams at UTC and UPMC closer to the clinical practitioners seconded to UMPC. "It will be open to all members of the Sorbonne-Universities cluster interested in health-related engineering", underlines Cécile Legallais, lecturer and research scientist at the UTC-BMBI Laboratory. With a representative of the Health Sector faculty and one from the Engineering faculty at UPMC, she is as of now member of the Institute's Steering Committee,

representing UTC. “IUIS corresponds to a demand from the medical professions who, faced with the development of medical technologies, wished to create and reinforce the links they had with qualified engineers. Many of the new tracks to innovative equipment and practice come from the hospitals - it is now up to the engineers to answer as best they can to the demand”. To do so, the new structure (before being physically located) will concentrate its efforts on research topics and training packages.

An accelerator for UTC

In terms of research projects, 2 calls for proposals have already been launched. The first will enable selection (and financially support) for 4 exploratory research themes, one of which will be hosted by UTC. In the framework of their credit course “Project”, 4 students (in Bio Engineering (UTC-BG) and Mechanical Systems Engineering (UTC-GSM) are currently working on a perfusion prototype for liver transplants. “We have already met the liver transplant teams at the Pity-Salpêtrière Hospital Group and regular update meetings are held to assess the feasibility of this idea, initially framed by Professor Olivier Scatton”, explains Cécile Legallais. The second call for proposals focuses more on advanced research and there are about 15 proposals to be vetted. “We certainly didn’t expect that much!” says Cécile Legallais, with a beaming smile. “For UTC, the new Institute will help accelerate the emergence of new medical equipment co-designed between the practitioners, the engineers and the operators”. It also represents a new source of financial support, with an initial budget allocation of 1 Meuro over 2 years by the Sorbonne-Universities cluster. The objective is to replace this initial allocation with partnership agreements between IUIS and various enterprises. In terms of training programmes, the Institute will facilitate access to thee Master’s degree, level 2 for resident doctors, with a Master in Biomechanical and Bio Engineering awarded by ITC. PhD training is also envisaged in this dual field by both universities UTC and UPMC. ■

VIEWS ON

Innovation in France and the USA

Véronique Kleck, Founder CEO of the Civic Media Agency and Xavier Wartelle, CEO of PRIME and President of the French Tech Hub (San Francisco) divide their time between France and the USA for several years now. They give Interactions readers an overview of their expertise to how innovation is perceived on other side of the Atlantic.

“In the USA in general and in Silicon Valley in particular, numerous innovative ventures only exist because they are “driven” by entrepreneurs. At Stanford, for example, the Stanford Venture Program has accompanied students now for over 30 years, for the purpose of transforming their projects into companies. Here we have a logic that is embedded in the American culture, and which is gradually coming to be in France, over the past decade; we can observe that there are more and more structures now to valorise research results”, he adds.

American entrepreneurs – a driving force behind innovation

It is a culture that bears fruit: if we place the number of start-ups in France at 10 000, the Silicon Valley in California alone has over 50 000. The scale effect also leads to emulation that is conducive to innovative projects. On the East coast of the USA, in Boston and especially in Cambridge, there is even an even higher density of intelligence, underscores Véronique Kleck, founder of Civic Media 4 years ago. She is currently collaborating with the Board of the French the Hub in Boston and organizes Round Table events with French and American actor-participants as well as “learning expeditions” or study tours. “The aim is to show how the Boston area eco-system, with its unique density in terms of collective intelligence encourages and facilitates innovative ventures. Here the research centres, the undergrads, the enterprises, the incubators, the investors, can get together any time. Even through it is less well known than Silicon Valley, Kendall Square neighbourhood in Cambridge concentrates, in a very limited ground space, the institutions of MIT, Harvard University and companies such as Google, Apple, Dassault Systems, Genzyme … the PhD doctoral students can readily meet with investors and the start-up executives can lunch beside the ‘top brass’ multinational management. If we take the example of the Cambridge Innovation Centre, there are over 600 start-ups spread over 11 floors of the building”, adds Véronique Kleck. And the city authorities accompany the emulation trend, supporting financially the creation of specialist incubators (greentech, biotech …).

> Legend round here says you have to go through about 7 pivotal switches before you become successful!

Be humble but self-confident, the bases of corporate agility

Entrepreneurship culture often provides project managers with an already long corporate creation experience: “They have their networks, they have the know-how, they have all the keys they need to rapidly develop their business concerns”, underlines Xavier Wartelle. “Such features are far less frequent in France where most start-up managers have no experience whatsoever”. It is the sheer maturity of American entrepreneurs that leads them readily to carry out “pivotal ops”, viz. to revise their business model from start to finish, if the previous model does not bring success. “Legend round here says you have to go through about 7 pivotal switches before you become successful! This is US agility at its best; it requires that to listen to advice, that you reappraise your business options which underscore success of start-ups” underlines Xavier Wartelle. The capacity these entrepreneurs have in continuing to believe in their projects despite initial launch period difficulties may rely on the self-confidence they enjoy and the right to make mistakes as was noted by Véronique Kleck. “Here, a business failure is seen as a logical step in building up and attaining maturity. Another point is that people out here are not afraid to talk about their ideas; they are not afraid they will be stolen, intellectually speaking. On the contrary, they love to share ideas to test the on others, to improve on them”, says Véronique Kleck in comparison with French custom. Another difference which can be noted as of kindergarten: learning to ‘sell’ ideas. “On Monday morning, children are invited to talk about their week-end and/or present an object. And, in the USA, a teacher would simply never say to a pupil that he/she is

Véronique Kleck

In 2010, Véronique Kleck created (then directed) CIVIC MEDIA, an agency specialized in digital mediation to accompany territorial decision makers to implement public innovation policies, land planning and a search for better governance, using innovative digital processes. As of the 1990s, Véronique Kleck noted the impact of the digital revolution on corporate structures and on our daily life. In 1993, she created and directed the VECAM association the role of which is to decipher the political and social consequences of implementing new technologies and how citizen movements can take them on board. In year 2000, Véronique was appointed to a ministerial adviser position (Lionel Jospin was the French Prime Minister at the time). In 2003, Véronique Kleck organized the World Summit on Cities and Local Authorities and the Informational Society, in Geneva then in Geneva. She was in charge of ‘digital cultures’ in the Association for French Regions (ARF). In 2010, she created Civic Media in which her activities is spread between France and the USA. She authored (in French) “Numérique et Cie, sociétés en réseaux et gouvernance” [Digital and C°, Network Societies and Governance], edited by Editions Charles Léopold Mayer.

A UTC graduate laureate for the “Engineer of the Year Prize” organized by the magazine Usine Nouvelle

President Alain Storck attended the ceremony to decide the laureates of the Engineer of the Year 2014, and personally handed over the “Promising start” Prize to Alice Froissac, a UTC graduate in the specialty Mechanical Engineer and herself a self-created entrepreneur. Alice designed a portable camera for the fire brigades that integrated ergonomic, technological and design constraints of this profession. The camera she developed resists very high temperatures and is ultra-light so as not to disturb the firemen during their manoeuvres. ■

http://webtv.utc.fr/watch_video.php?v=WD4YRBK12B4B

UTC’s Open days - Saturday December 13, 2014

As it does every year, UTC opened its doors Saturday, December 13 so that school-goers interested, their parents and friends could attend lectures and visit various open-house stands where explanations were available about UTC admission procedures, including APB post-baccalaureate admission, about internships, placements and the university policy to facilitate studies abroad … a second Open Day will be organized Saturday March 14, 2015. ■

A ‘Start-Up Weekend’ at Compiègne

This is an event which is commonplace in the USA and for which this was its first occurrence at UTC, to be held at the UTC Innovation Centre, November 14-16. The underlying principle is to launch a start-up enterprise in 54h! The first test for the participants consisted in ‘pitching’ their ideas before the other participants, before the teams do their prototyping work and their search for a business model. When the time allotted is over, a Jury comprising professionals of the sectors concerned met to select the best projects, among which we can cite: Leap Music the aim off which was to present a new interactive 3D musical experience; Renovalve which created a prototype repair for the heart mitral valve; Penio, a digital pen for collaborative, connected work; Visual Map, a mapping platform to simplify access to open source data … Projects like these will be followed up at the UTC Innovation Centre. ■

mediocre but will propose remedial classwork for the weekend so they can keep up! Ingredients like these help build up the self-confidence that gives Americans the assurance that they are the best. But of course this can also close them out to external influences: witness how very few Americans wonder how things work in other countries or cultures”.

First question: what use is there for innovation?

American entrepreneurs, more than in France, question the use of “design thinking”, of the way innovation is accepted or not by possible users. “Globally speaking, the Americans place the interaction Man/technology at the heart of the innovation projects, viz., beyond the purely technological framework to invest in uses and economic models. The first and foremost question here is always about the use of a new technology and its supposed added value, and not about the way it will be operated”, explains Xavier Wartelle, who exemplifies this with a referral to domotics. Here we have a technology that was supposed to manage home appliances, from heating, to lighting, motorized blinds and sunshades, but it never really took off, despite the technology being advanced and reliable. The reason was that he users simply were not convinced that it was worth it! “Here, in the USA, a product launch takes place before finalizing the product, in a simplified format, to test whether potential clients adhere allowing the company to validate or modify quickly needed changes”, analyses Xavier. The French companies that he accompanies benefit from this cultural approach, companies like Talent Today a start-up crated by young French entrepreneurs that allow for on-line personality tests leading to advice as to professional orientations for students.

> Here, a product launch takes place before finalizing the product, in a simplified format, to test whether potential clients adhere

Innovating by revising business models

The initial business model used by Talent Today called for sales of the platform to the universities. But in this case, the commercial, sales operations - which were tedious themselves - turned out to be less convincing than expected. “Once they had moved to the USA, the founders opted for another business model: this time they added in a viral feature, via the social networks, and this allowed the students to compare their profiles which led to the building up of a substantial reservoir of profiles that the company could then show to potential recruiting sectors”, explained Xavier Wartelle. The new business model option paid off – from 5 000 members in early 2014, the total number of subscribers is now in excess of 3 million as the year ends. Xavier, as a hardened observer of the new tech markets, the next opportunities will relate essentially to so-called ‘cloud’ computing and ‘big data’ handling as well as in connected object technologies which will all certainly largely impact on traditional industrial and other sectors. “New technologies also introduce a rapid computerization of uses on a global scale. Students who use Talent Today may be in the USA or in Peru and the MOOCs given in Stanford can be accessed from anywhere where there is an Internet connection. For this reason, innovating French companies must fairly soon come to the USA – the second market-place to be conquered in the worlds, after France in these fields; they must also progress rapidly if they want to survive”, advises Xavier Wartelle.

Xavier Wartelle

Xavier Wartelle is CTO for PRIME, a San Francisco based agency that aims at promoting development of innovation in the Ile-de-France Region (Greater Paris) with input from American companies. In this framework, he contributed to the setting up of the Open Innovation Club - notable members of which are Total, EDF and Renault, who all have offices in Silicon Valley – and whose mission it is to detect the most interesting start-ups to envisage their being established in the Ile-de-France. The partner for this is the French Tech Hub, also directed by Xavier Wartelle, the objective assigned being to accelerate the establishment and growth of French companies that wish to set up business in the USA.

Innovation in relationships and collective intelligence

Véronique Kleck, qui vient de participer à l’organisation de la conférence Design Driven Innovation du Mobile Experience Lab du MIT, ne peut qu’approuver cette approche du *user expérience*. Pour elle, l’innovation numérique permet aussi de construire une nouvelle société, reposant davantage sur la collaboration, l’ouverture, le don... « Elle ouvre de nouvelles perspectives, face au modèle de la croissance à tout prix, aujourd’hui dans l’impasse, analyse-t-elle. Les réseaux construits grâce aux outils numériques font connaître des projets qui ont du sens, créent de la participation et construisent une nouvelle démocratie locale. Pas de Fablab, pas de crowdfunding, pas de circuits courts sans réseaux sociaux. Le numérique donne aux citoyens des moyens supplémentaires pour devenir acteurs et producteurs, sans attendre que les politiques prennent en main les défis qui nous attendent. La véritable innovation numérique, c’est l’innovation relationnelle. ». Civic Media travaille en ce sens avec des collectivités françaises. Avec le Grand Lyon, l’agence crée et anime des outils de démocratie participative, sur des sujets comme la gestion de l’eau. « Il s’agit de concilier le réel et le virtuel, en créant à la fois des plateformes collaboratives d’échanges et des ateliers physiques afin de produire des textes et des déclarations construits par les citoyens », détaille-t-elle. Avec l’Abbaye de Fontevraud, qui héberge la plateforme IDEV dédiée à l’innovation numérique et au design, elle travaille à l’identification d’outils permettant d’enrichir l’expérience des visiteurs. « Les outils numériques peuvent augmenter l’intelligence d’un collectif afin de modifier son rapport au politique. Il faut conserver et organiser cette dimension politique, au sens noble du terme, sans laquelle les outils numériques peuvent aussi favoriser des réflexes de repli, et servir des minorités au détriment de la cité. » ■

3th International Innovation Summit

Digital metamorphosis of territories

This year's two day International Innovation Summit was hosted by UTC, was attended by hundreds of participants – the theme being "Digital metamorphosis of territories". Continuing the exchanges and debates of 2012 on 'Innovating urban districts' and with the Montreal (Canada) and Liege (Belgium) partners, the 2014 UTC Summit provided the venue to bring together guest speakers from 7 countries and 3 continents, offering the audience their analyses of the ongoing digital revolution and the impacts it can have at all territorial levels. Could this lead to better life-styles? If so, under what conditions? Here is Bernard Stiegler's Introduction, followed by the analyses of 7 experts who took part in the exchanges at the International Summit.

CONTEXT

Autonomy-conducive innovation

Creative innovation a Schumpeterian concept that underscores and supports speculative capitalism has now reached the end of the road, in terms of growth and well-being. Unemployment, ecological crises, widening wealth gaps, disillusions ... The dream of infinite growth served by unending technological innovation is over and done. For Prof. Stiegler, the ongoing digital metamorphosis bring its dangers that worsen the current situation and its promises.

"In the coming years, somewhere between 30 and 50% of all employment positions will be replaced by machines and automated processes. The ensuing productivity gains will be enormous, way beyond those due to implementation of Taylorism. Notwithstanding, from warehouse handlers to surgeons, unemployment will also take on huge proportions that will even lead to the question of short-term solvability of Fordist companies. We must start thinking about new distribution patterns for wealth", feels Bernard Stiegler, who will shortly be publishing a book on the subject, under the title « La société automatique » [Automated Society]. What the philosopher proposes to counter such changes is to invent a "contributive income", on the same model as that used to pay part-time show world workers, which would make citizens valorise the tile they have at their disposal, a time that will necessarily increase as Society becomes more and more automated. " In parallel, we must set up institutions to develop and valorise knowledge ad to reinvent an economic model that would be based notably on contributive projects", he surmises, inviting the listeners to think about these questions today inasmuch as these will become more acute to answer in the next decade.

Contributive neighbourhoods or "smart cities"?

"This is a work area which also involves UTC, to the extent that we must prepare teaching courses and launch research in line with the future context. Territories, urban districts and neighbourhoods must also become contributive and here technologies will have a major role to play, with the proviso that they are under the control of overarching policies. Failing to do so, the scenario we see in Singapore may repeat itself with remote management of urban processes under the control of multinational companies. Deviations like this, integrated to the concept of smart cities is dangerous", warns Bernard Stiegler. Automation is so to speak at the door of neighbourhoods to control, for example, their water, transport or power supplies, among others. "Digitised urbanity (and automation in general) are major societal challenges to the extent that it will tend to destroy our autonomy (or self-reliance)", adds philosopher Stiegler. From driverless vehicles to big data economics, automation will annihilate decision making by humans and individuals. We must therefore take care to use technologies to give back their roles to the individuals, as citizens, consumers, members of a family, a company, etc., and not to quash any initiatives they might envisage. "This is the task undertaken by Mayor Jean-François Caron, I his town of Loos-en-Gohelle (French Region Nord – Pas-de-Calais). "The energy performance sensors installed by the Townhall are monitored by the Mayor and his staff and not connected to a data processing centre that would manage energy consumption on behalf of the inhabitant-consumers. It is the latter who democratically take the relevant, decided steps in meeting organized for this very purpose. Technology we see here can also serve collective intelligence, rather than destroy it".

> Territories must also become contributive and here technologies will have a major role to play, with the proviso that they are under the control of overarching policies

Innovation, somewhere between utopia and a fight to survive

On a wider scale, Prof. Stiegler analyses at the example provided by big data processes in financial spheres: following the subprime crisis, Alan Greenspan, former Chair of the Board of Governors of the Federal Reserve Bank (FED) admitted that economic modelling alone would not provide all the answers and that we needed to use it only to support and serve economic theory. Automation, whatever, the sector where it is introduced, increases the local system entropy, viz., its level of disorder, going as far as destroying it. "Thus, Google linguistic robots lead to a loss of semantic diversity, as has been demonstrated by Frédéric Kaplan, research scientist working with the Ecole Polytechnique Fédérale de Lausanne (EPFL). Increased entropy creates in indifferentiation and finally to the death of the system. In reverse, negentropy generates singularities and more values. The future of innovations leads to two era options: entropocene or a negentropocene" adds Bernard Stiegler referring to entropic concepts. And, to conduct the human species on a path that would enable a few specimens with their free will intact to survive, we must use the time gained through automated processes to fight the generated loss of autonomy.

'Territory-schools'

Society tomorrow must produce a lot of collective intelligence. Automation authorises a degree of autonomy, as is proven in the case of pianists – they can only perform by freeing themselves from learning automatisms they first had to acquire by modifying natural automatisms è- in this way they can create, improvise and interpret in a "singular" manner. Physicists must use and free themselves from what they have already learned in order to make new discoveries and enrich the system. A race-course driver is a machine, to the extent that he can 'disautomate' himself for a fraction of a second to avoid a crash or to win the trace. 'Disautomation' is only possible if the individual has previously automated an enormous quantity of movements, reflexes, knowledge". In order to reach this degree of autonomy, we must accept to undertake experiments, at every level of our organization.

Automation, whatever, the sector where it is introduced, increases the local system entropy, viz., its level of disorder, going as far as destroying it.

We must give individuals, the universities, the territories, the right to experiment. This indeed is the only way to test and retain appropriate solutions to face up to the major changes ahead. "That is why I am currently working on the notion of territory-schools, where young PhD students carry out contributive research tasks to study, for example, how one could distribute contributive incomes to replace social benefits. This research work also involves the inhabitants, the economic spheres, the political and academic milieus … all of whom are driven by the right to innovate. To anticipate on future changes, the European Union should launch and encourage such experiments". ■

SPAIN

DIGITAL TECHNOLOGICAL INNOVATION AND TERRITORIAL DYNAMICS WORKSHOP

Creative urban districts : a unique recipe for each territory!

Montserrat Pareja Eastaway is Professor of Economy at the University of Barcelona, Spain. Her research work focuses on innovation in city settings and urban districts. As she herself sums up – "A lot of research is ongoing here, analysing the relationships between innovation, territories and Society at large".

Currently, Prof. Eastaway is seeking answers to the sensitive question "What are the pillars for rehabilitation of Spain, in the aftermath of the crisis? This is one aspect of a research project conducted jointly by the Universities of Barcelona, Valencia and Lerida. To be more specific, Prof. Eastaway is studying the impact and organization of so-called "creative neighbourhoods", notably in terms of governance and networking. "We have clearly understood, that more than just coming up with a single recipe, we had to pay special attention to the strengths a d weaknesses of a given city, its history, its economic tissue… to deduce and identify possibilities for developments that would be solidly grounded and not just superficial", she insists.

One recipe for each territory

She also insisted that important as it is for a city, for a district or a neighbourhood to attract external talents, it must also ensure that it can produce its own new talents, new skills and review the programmes, if needed, of teaching/ training establishments. "The strengths of a given city are unique; we must be able to detect and encourage them to build a more creative city", says economist Eastaway. This leads to the concept of one recipe for each territory. To illustrate, Montserrat Pareja Eastaway explains how Barcelona integrated design – a strong historic feature of the city – in its innovation district, alongside media agencies, energy companies, ICT start-ups and biology intensive institutions. In contradistinction, when Barcelona helped Medellin in Columbia, South America to set up its creative district, the Catalan capital went beyond just duplicating its own experience, adapting the proposals and plans to take the local context into account.

“22@” in Barcelona

If we decide to invent a single recipe for each city, the ingredients are well-known, viz., the relationships that already exist between academic, political and economic spheres that we need to detect and deploy. “The notion of network(ing) is very important. The interconnections between these three spheres are primordial when it comes to building up innovative new cities or urban districts. We must therefore create spaces where these connections can be generated and animated. For each territory there will be a network-head to animate the operations”, recalls Montserrat Pareja Eastaway. In Barcelona, the so-called “22@” district covers 200 hectares of industrial waste land. As one of the most significant urban rehabilitation programmes in Barcelona, “22@” called for 180 Meuros in public investment. “The city authorities managed this dossier, and assumed the role of local innovation-intensive network head. They organized such simple things as frequent collective breakfasts, public lectures, meetings and exchange programmes. Physical eye-to-eye meeting is very important here: going digital is one thing but it boils down to recognising that almost everything rely on human contact. Moments like these help to keep the innovation process moving, with an identification of common interests between enterprise and research scientists, to whom the city authorities are gradually handing over the reins of leadership of 22@, underscores the economist Eastaway. And in order for these common interests to be able to one day turn out some concrete projects, the city authorities have also readied and made available a focal centre to conduct experiments.

Regional planning to avoid overlapping projects

In order for these innovation intensive districts to remain interesting, we must avoid “overselling” the product. “Ever since the economic crisis, everyone wants to have their own innovation district given that sectors that connect into innovation and knowledge appear to survive better than others. However, it is not advisable that several such districts co-exist in the same region, unless they are specialized in different types of activity. That is why regional planning is primordial” concludes Montserrat Pareja Eastaway. ■

FRANCE

The digital revolution transforms our territories

OuiShare is a French phenomenon of a national scale, with its local groups of « Ouisharers », who feed a contributive blog for research projects and incubators, as well as organizing an annual get together event, the Ouishare Festival. NDLR – bilinguals will admire the pun “ouishare” pronounced “we share”. Benjamin Tincq is one of Ouishare’s co-founders, along with Antonin Léonard, Flore Berlingen and Edwin Mootoosamy. As Benjamin sees it, the digital wave transforms our territories along three major trend-lines: shared territories, productive territories and joint territories.

“Shared territories rely on collaborative consumption and a shared economy, on the peer-to-peer model. Loans, donations, resale, renting … all these activities point to new exchange patterns, mainly non-commercial in nature. A Dutch platform is working on this subject, facilitating non-commercial loans of goods at a ‘hyper-local level’. In the USA, the ‘Next Door’ platform also uses this model, just like ‘Mon Petit Voisinage’ in Brittany. ‘Peuplade’, which was launched in France in 2003 by the sociologist Nathan Stern, was the first to guess the emergence of the trend, creating urban district networks”, illustrates Benjamin Tincq.

So, what is the business model for shared territories?

Well, the platforms are actually having a hard time identifying a relevant business model, and future implementation will call for success here. For the time being, only the start-up mode allows the networks to live, implying a concentration of value on the platform (via capital risk and fund raising) to the detriment of shared value in the territories. “We still have a lot of progress to make in terms of platform governance, so as to redistribute the value among the participants. In terms of self-share modes, we would have to imagine, for example, a co-operative of drivers for the digital platform as is the experimental case in of the city of Seoul, South Korea”, underlines the co-founder of Ouishare.

Productive territories, sharing and resource savings

It can be seen that the productive territories integrate manufacturing sites with a sharing of material and immaterial resources via a community of “makers”. In the core of a local production infrastructure, the persons involved exchange their drawings, technical

tutorials and 3D files where they share their knowledge bases. The Fab.labs, Maker Spaces, Tech-shops are all models which are becoming more and more common today. “They can be defined by the combination of sites, communities and shared knowledge, sketching out the bases of a part relocalisation of production in a context with limited resources”, summarises Benjamin Tincq. In Barcelona, for example, the local Institute of Architecture hosted the first Fab.lab created in Europe (2007). Faced with the success of this operation, and the four following projects, the capital of Catalonia is envisaging the installation of one such centre in each urban district. “The city of Barcelona is accompanying the movement with ad-mass training programmes for these districts with a logic of appropriation of the system by the local population and the aim of creating a virtuous eco-system; in the long term, the idea is to manufacture in situ, according to the needs identified in a given territory”, explains Benjamin Tincq. And Barcelona is looking far ahead: in the next 40 years, the city envisages being self-sufficient for some 50% of its industrial and food supplies and 100% for its energy procurement.

In the core of a local production infrastructure, the persons involved exchange their drawings, technical tutorials and 3D files where they share their knowledge bases

‘Democratising’ production means

Will these spaces be reserved for an elite capable of understanding and assimilating new digital technologies? “If this happened, we would miss the target. The now well-known 3D printer, for example, is only the tip of the iceberg, inasmuch as it must not mask the social processes that take place in shared sites”, adds Benjamin Tincq. “Fab. labs tend to democratize production means obeying a logic that is the opposite of centralized industrial processes and closer to consumption levels. People who participate here become increasingly aware of the environmental challenges, even if today’s experimental phase implies a waste of plastic materials to make useless objects”.

New governance for joint, open territories

Today’s digital tools are bringing new life to ideas behind participative democracy and shared governance. New applications allow citizens to record environmental data, as is the case in Barcelona “where there is a strong emulation factor” with the local app. ‘Smart Citizens’. Data collected about the air, about noise and pollutants are redirected to an open source platform for the purpose of analysis and advice as to appropriate decisions to be taken. “It is a participative approach, and represents a counter-weight to smart cities as imagined by major industrial groups”, adds Benjamin Tincq. Participative financing of these projects is part of the movement‘s ethos, as with the French Bulb in Town platform for small shop-owners. The Movement for Highly Citizen Territories (THC in French) has accepted this challenge to associate the citizens to territorial governance. But digital processes will never replace eye-to-eye meetings. Or as Benjamin Tincq himself concludes – “Let us never forget how important it is for people to meet in real life contexts. Online and offline living styles must echo and complete each other constantly. The combination of both is a powerful feature, and its management has now become a primordial skill to be learned”. ■

SWITZERLAND

DIGITAL BETTER LIVING AND CONNECTED HEALTH WORKSHOP

A robot to manage hospital flows

We are witnessing a new generation of hospitals coming onto the health marketplace. “With digital tools that were ‘digitally-designed’ from the beginning, there is a breakthrough in practice compared with earlier technologies – we are now into more immaterial and less concrete”, says Thierry Courbis, Managing Director of Leader Health – a Swiss company specialized in consulting for design of the new establishments, and a leader in France.

Within the decade, robots will become commonplace objects in our daily environments

Among its projects, Leader Health has notably accompanied the arrival of American designed robots in 3 hospitals: Beauvais, Nantes and Epinal.

Their purpose is to gradually take over the functions that are not directly related to the patients, such as logistics and other support tasks. “For the moment, Leader Health advocates solutions in the framework, of operations qualified as “change inducers” where hospital staff are prepared for the coming technological breakthrough, viz., a digitised hospital. As Thierry Courbis explains “the robots are only present for a few weeks in these hospitals, to test the solutions in a “real life” context, enabling the staff also to check the scenarios and innovative solutions discussed, developed and finalized by Leader Health. But the experimental phase went so well that, for instance, the Nantes hospital has decided to acquire several robots to improve day-to-day management without waiting for the installations of the new Ile-de-Nantes Hospital Group”. Beyond technology, Leader Health has expressed the wish to accompany the arrival of the robots by a far-reaching enquiry as to the way the hospital care staff, patients and family welcomed and accepted the new devices.

A robot called Emilie tested at the new Epinal Hospital

In the city of Epinal (East France), it was decided to demolish the old hospital, with its unfortunate reputation of having irradiated 450 patients in radiotherapy, replacing it by a cutting-edge establishment, or “digital hospital”, designed by Leader Health. Work is under way and 3 change

inducer operations are being conducted there, one of which uses the services of the now-famous robot, Emilie. Emilie has a female voice, looks a bit like D2R2 (for Star wars' fans), she can talk, take the lifts, follow the corridors … she is in a test mode in the elderly patients' ward, providing a setting to see the machine in contact with the least mobile, the least familiar with robotics. "Emilie's days were well filled, and as of 6 am, she did her rounds, picking up the biological samples, handing out the mail to patients, ensuring the logistics of medicinal drugs and para-medical supplies; the designated objective is to see Emilie carry a three month 'internship'", says Thierry Courbis. Thanks to an anonymous questionnaire and to a team of field-investigators on the site, Leader Health has been able to analyse how the new actors in the Epinal Hospital perceived the robot. As it turned out, Emilie was more a source for pride than fear, as seen both by the hospital staff and the patients themselves. Some children coming in to visit their grand-parents in hospital care started attaching drawings on the robot and the aged persons there never thought they would be in the company of a machine before leaving the establishment.

Source of pride for the hospital and a few fears...

"We had already noted the phenomenon at Beauvais, where those who had 'worked' alongside Diane, saw her leave, even if some of the staff were reticent to see machines which in the long term will replace jobs", adds Thierry Courbis. The change inducer also help us to adapt the robots to their environment: after a somewhat euphoric period, connected with the robot's arrival, and following a phase of technical difficulties to programme the machines correctly in terms of the building, so as to ensure autonomous internal displacements, and become fully operational. "The robot soon became an integral part of the hospital's daily activities. For example, the nurses adjusted their round as a function of the robot's presence to pick up the bio-samples and drop them off at the hospital's laboratory. The robot rapidly became a perfectly integrated working-tool, even in the least technically advanced local structures", recalls the Managing Director.

> Emilie was more a source for pride than fear, as seen both by the hospital staff and the patients themselves.

Transferring salary to high added value positions

As a former hospital director, Thierry Courbis envisages the future pragmatically: faced with budget restrictions and the constraints of taking in patients correctly, our hospitals will have no choice but eliminate low added value positions, concentrating their salaried personnel in care and accompaniment tasks – areas in which the robot will not be able to replace humans, at least not for a long time yet. "Robots lead to profitability gains and regularity of logistic flow functions. The studies engaged are primordial for Leader Health who has to face up to a degree of distrust concerning the place of men, machines and new digital, robotics technologies", underscores Thierry Courbis. "With the ageing of our populations, more numerous chronic ailments and the general extension of our life expectancy, the numbers of staff in hospitals will continue to grow, but in a logic where the salary efforts will be transferred in favour of high added value or in direct connection with each patient-case. In this respect, the arrival of robots is just round the corner. We still have to overcome the psychological and economic brakes, given that to operate/maintain a robot you need between 1 500-2 000€/month. Like any other innovation, the cost will decrease with time. Within the decade, robots will become commonplace objects in our daily environments" ■

FRANCE

From smartphones to medical accompaniment

Cécile Monteil, general practitioner and associate for the company Ad Scientiam – which conjugates medical research and new mobile technologies, believes that "Where our health is concerned, new technologies will prove useful, but for this purpose, they must be integrated upstream, as of the clinical research phases.

The assigned objective is to adapt new technologies to health care protocols. "Smartphones for example can be used in the case of chronic illnesses that require constant monitoring. For Parkinson, it turns out to be more practical for the patents to integrate data in their phone, carried constantly, than to have them written down in a notebook, which we note at the last minute, with errors and bias", illustrates Cécile Monteil. Thus, without intruding in the patient's private sphere, the smartphone records the data in a higher quality format and allows the practitioner to monitor the case more efficiently.

More accurate information for chronic ailments

Connected objects also bring specific benefits: with an illness like eczema, where itching can wake up persons in the middle of the night, inducing a high level of fatigue, a bracelet can be used to record 'wake' periods and compare these with normal patient's rhythms. In the area of cardiology, a connected object can record heart pulse rate and the associated smartphone app will invite the patient to indicate his/her current physical activities if and when heart-rate increases abnormally. "This data represents information that doctors simply could not access before. But of course they are meaningless

outside a given context: if a heart pulse rate of 170, when a cardiac patient is going up a flight of stairs, it if not at all a serious as if the same pulse was noted while watching TV", adds Cécile Monteil. Ad Scientiam is working with the world leader iHealth to develop these health service related connected objects, with academic research to analyse the symptoms carefully using new technologies as well as will enterprises in the pharmaceutical sector to monitor the effects of the medicinal drugs used under real conditions.

Motivation, monitoring and prevention

In the long term, patients will benefit from this research. To illustrate, in the case of Parkinson or diabetes, better monitoring ensures better treatment. We can imagine an "app" that connects to the pill-box dispenser and which sends out a signal if the patient has forgotten open it. Apps on smartphones reinforce the monitoring and improve accompaniment between two appointments, which in turn increases motivation and keep the morale up", explains Cécile Monteil. Another example is when there is an impending heart failure, with the symptom of water gathering abnormally in the ankles and which usually ends up in the emergency ward. To avoid this, the patients only need to weigh themselves every day: if the weight increases abnormally their GP can call them in for an urgent check-up. The question is: can solutions like these be adapted to every case? "Yes", replies Cécile Monteil. "Smartphone technologies are constantly improving and the "apps" can be made sufficiently accessible to be understood by all, using, for example, photos of the medicinal drugs to be taken. Patients do not like intrusion, so if they use their smartphone, it is 'their' acquires technology and not a new machine. In the framework of our research, we have noted a very high level of satisfaction, even among the elderly persons."

Will "apps" be reimbursed by the social security?

The potential here will become a reality if the tools are co-designed by engineers and medical practitioners. "There are currently only a few inter-connections between these two worlds. The doctors know their medical fields, but they often ignore the possibilities offered by new technologies. The role of Ad Scientiam is to crate bridges between the engineering medical professions", underlines Cécile Monteil who has drafted the research protocols that allow an interaction of new technologies and the patients' specific needs.

This new area of research raises a series of questions. If the protection of personal data is guaranteed by drastic regulation, the question of reimbursement of medical applications has not yet been settled in France. "In the USA and the UK, certain apps are reimbursed by their social services. But it should be seen that they can induce considerable amounts of savings – if only avoiding persons being taken to emergency admission services", underlines Cécile Monteil, but who recognizes that there can be deviations via "well-being" or "quantified-self" apps in which medical data can be misused, or support hypochondriac behaviours.

There will still be doctors

If I have not completed enough steps in my day, or of I refuse to share the calories ingested during my last dinner, I become suspicious … these very applications could disconnect people, inasmuch as they become too attached to their data and algorithms. This deviation is a risk that must be considered carefully since data taken out of context can be interpreted in many different manners". This is why there will always be doctors. "Interpreting data and monitoring patients will remain essential – an application will never announce to a patient that they have a cancer, for example. The role of the practitioners will evolve towards a more human approach: new technologies will set time free that can prove useful for explanations and accompaniment of the patients". ■

PICARDIE

A *transfer centre* for social innovation

DIGITAL CONTRIBUTIVE TERRITORIES AND ECONOMIC ACTORS WORKSHOP

The Institute Jean-Baptiste Godin, specialized in social and solidarity work is a unique centre in France for non-technology related transfer", asserts Nicolas Chochoy, Director of the Institute.

Agencies who work in the area of social and solidary (ESS) do not culturally often collaborate with research scientists. The Institute Godin was set up in 32007 by a group of ESS enterprises, research scientists and the Picardy Regional authorities. The aim was to provide adapted tools for all in order to measure the degree of solidarity via proven implemented programmes", explains Nicholas Chochoy. In 2009 the Institute received a certification as a "transfer centre" by the Region and this enabled objective assessment to be undertaken for candidates replying to calls for project proposals.

Moving from research to transfer operations

The Institute Godin is engaged in three types of activity: scientific research, conducted by 5 PhD students on issues of social innovation, applied and collective research so as to prepare the tools that will be specific to a given theme for a 4 year period; transfer of these tools to ESS actors and to local authorities. The Institute has carried out some 70 expertise assessments with projects leaders such as ADEME or with the regional innovation agencies and in Sept. 2015

will be launching a training course with the Amiens city CNAM centre, leading to a qualification with a certificate in “social innovation”.

An analytical grid for social innovation markers

The tool which today has a benchmark value is called “Markers in social Innovation”. “These ‘markers’ are result of thematic work carried out by the Institute over a 4 year period in social innovation and also led to publication of a book (Ed. Harmattan, Paris) on the same topic, details the Director. It is a very powerful tool that arose through necessity, that of the Picardy Region, which, for the purpose of selecting application files it had received after its call for expression of interest in social, innovation, needed an analytical, objective grid to help them with their selective choices. We built up this analytical tool with the Picardy Region and the regional Agency for Innovation and it turned out to be very much needed to assist in then public decisions taken”. Today the Institute Godin is transferring this tool to the Pas-de Calais Departmental Council, after registering it with the French national Intellectual property Institute (INPI). The Pas-de-Calais have set up a fund dedicated to social innovation and it presented the process in Montreal, Canada at the 4th International Conference on Social Innovation.

The UTC Innovation Centre can contribute to the emergence of projects in this area

Adapting digital tools to users’ needs

“We are following an institutionalized approach to social innovation, in vogue in Quebec, attached to processes and practice. For example, one of the laureates of the Region’s 2013 call for proposals “Graines de pays” [local seed] is attempting to reverse a notable trend observed today: digital tools are evolving far faster than normal people can take them on-board. ‘Graines de pays’ are working with local populations via associations to identify the expectations and the points that ‘block’ progress for users. For example, an elderly person may wish to write textos but is incapable of doing so. The objective will consist of forwarding this piece of information, back to the digital tool designers so that they may carry out appropriate adaptations, to the extent of their possibilities and wish to comply”, explains Nicolas Chochoy. To assist the approach of Graines de pays, the Institute has designed a “success feature dashboard”, so that progress accomplished can be assessed in time.

Reinforcing the connections between social innovation and technology

The work-load of the Institute with the Picardy Region will become more intense over the coming months. Early 20215, the Region’s Executive Council will be launching the first social innovation eco-system so project teams can present their activities throughout the rest of the year and not just in the framework of calls for proposals. “Various accompaniment tools will be proposed. The UTC Innovation Centre can contribute to the emergence of projects in this area”, suggests Nicolas Chochoy. “The Picardy Region has decided to support work here to the extent that following suit to their first call for proposals, it became very clear that it represented a future prospect of new jobs and better economic and democratic dynamics for the Region”. The company Sensovery - created by UTC graduate Anne Guénand (engineer and designer) was also selected in the 2013 call for proposals for the her project “Perceive and act locally: restoring a social link for isolated or disabled persons”.. ■

FRANCE

A digital world and the principle of convergence

Florin Paun is the Deputy Director in charge of Industrial Innovation at ONERA (the French Aerospace Lab. cf. http://onera.fr (English)). As he sees it, self-driven cars will be commonplace in our daily environment as will self-piloted aircraft; in the light of such probable developments, Mankind “must necessarily ne augmented using digital tools”.

“Every new step of technological progress we take leads to a reduction of poverty and therefore conducive to better shared lives”, says Florin Paun. “And the emerging digital world will totally reframe the real world we know, calling into question the principle of the British economist David Ricardo, famed for asserting that ‘what is rare is expensive’. Digital technologies are taking us preferentially down the road of a principle of convergence, evoked by French economist Thomas Piketty who demonstrates that dissemination of knowledge enable a more equitable redistribution of value. Cf. his Capital in the 21st Century. In a similar manner to the impact Gutenberg printing had on the Renaissance in Europe followed by the Industrial Revolution, the digital world will totally change social relationships and wealth gaps. “Internet is print to the power 10! And we are only at the very beginning!”

Towards a re-equilibrium of future land & property pricing

Florin Paun’s thoughts do not stop there: as he sees it, the principle of convergence also applies to more wide-spread access to property. At a time when the frontier between a work place and home becoming blurred (distant or remote work, virtual

meetings …) and when public transportation is changing to adapt, market property prices will inevitably converge. "A digitized world will facilitate our access to the most expensive square meters of floor space and will reduce the wealth gap in terms of property prices", he asserts. Another example: if a driver today buys a car for the pleasure of being behind the wheel of a powerful machine, and for the sensation of freedom it procure and the self(-image it sends, when cars will no longer need human drivers, the criteria used to purchase a car will change necessarily. "A car will then be a home-to-work-to-home 'shuttle', in which we would also work and which we shall share more readily than we do today. Platforms for co-driving, or shared driving have a great future ahead of them," predicts Florin Paun. He also feels that the applications of a digital world will enable us to attain economic growth that would consume less resources. "We shall no longer be alone in our cars, stuck in traffic jams, but 3-4 real-time co-passengers, in a sort of personalized public transport system."

When cars will no longer need human drivers, the criteria used to purchase a car will change necessarily

Next on the runway, the 'Avionlib'?

More than self-drive cars, the next adventure will be made of automatic aircraft. ONERA is already working on this quasi Sci-Fi topic. "On the same model as Velib and Autolib (self-service cars and bikes), in a framework called 'PPlane', along with other European partners, we are designing an 'Avionlib' (self-service aircraft)! We are imagining how to integrate it in a multimodal trip, from home to the aerodrome via public transport (grouped or individual). And while we wait for this to come to fruition, among our permanent challenge's we are trying to reduce vehicle noise, pollution and fuel consumption while improving on performance figures" underlines Florin Paun. With composites that allow lighter structures, to traffic control at and round airports, every good ploy is useful when it comes to lowering the environmental print we leave and reduce nuisance factors. In this respect, ONERA has been making full use of digital tools for the past 30 years. The research centre has a high reputation in the world for its expertise in modelling that ONERA offers to its industrial partners. "Today, we can be found in our labs and offices modelling a helicopter that will optimize fuel consumption and at the same time, studying very powerful tools to certify data handling sources on the Internet, where we see "the best" alongside "the worst". In a society undergoing constant change, the person who controls our information will be "the king of the world". Soon, we shall see that if Man himself is not augmented by use of digital tools helping him make decisions, he shall not enable to 'survive'. Try to imagine living in a totally unknown city without a GPS... Man under these circumstances will feel at a loss and alone". ■

CLOSING OVERVIEW

"Innovation is both the poison and the antidote"

Bruno Bachimont, Director of Research for UTC, philosopher and engineer, offers a synthesis of the core innovation thematic, as debated during the two-day Summit

By mixing digital technology and innovation points of view, as they impact territories, the UTC Summit throw light on the deep changes we are experiencing today. In particular, the digital world can be seen as a real, modern pharmakon (both poison & antidote), full of promises but also threatening, as Bernard Stiegler framed it.

In the course of the discussions, the audience identified 3 sources of tension that could be referred to as antinomies of a digital world:

Unlimited and arbitrary : digital technologies and processes would appear to make possible the dream of being able to access ALL data, a new technical hubris. The other side of the medal is increased complexity that makes the operations totally opaque and the results unintelligible. A digitized world become arbitrary inasmuch as we no longer understand how we reached the results and anyway we have no control over them.

Emancipation and alienation : a digitized world opens up paths to new "possibles", new ways to express our individualities and at the same time convey orders, accelerate time, and demanding that we obey (reply to e-mails, to SMSs, etc., as soon as they arrive, at all times and wherever you are at the moment of reception).

Normal and pathological : Final point, digitization leads to data dictatorships and standardizes references to the extent that deviation is seen as pathological. Individuals are no longer singular entities but a set of statistical coordinates where any mean standard deviation is a scandal and as such must be eliminated. These ambivalent dilemmas can be solved by invoking notions that the digital world reframes ad places at the core of our social lives:

« Contribution » whether it be through participative sciences or public debate, or again through new amateur figures ;

« Regulation » to the extent that new and possible dynamics that a digital world can generate also lead to regulatory instruments that remain to be invented and implemented ;

« Enaction » : the innovation question should be addressed and understood on the same sort of model as living cells, in a coupling with the environment, of the living organism to its eco-system (Scott Lash).

To conclude on the Summit's findings, what we see is a new space for thought, where the concept of territories also is part of the reflections. ■

The proceedings of the International Innovation **Summit on "Digital metamorphosis of territories"** are at **http://webtv.utc.fr**

Regard sur
The digital tsunami at school

Emmanuel Davidenkoff, Chief Editor of the magazine *L'Etudiant* and specialist of teaching issues, earlier this year published "Le tsunami numérique" [The Digital Tsunami] at Editions Stock, Paris.

In 20 years' time, will parents still drive their children to school?
Yes! We shall always drive our children or grandchildren to school, for both practical and political reasons. School will always be a place where children learn to live in Society, which is something that goes beyond learning simple multiplication tables and grammatical rules. But the school model – viz., the school we dream about or imagine – will no longer be summarized as "4 walls, 1 teacher and 27 pupils – 50 minutes class". Other operational modes will prevail, but it would be a brave person who seeks to predict them today, given the speed at which ongoing changes are occurring and where they are taking our schools.

What educational paths might we envision?
On-line learning, video supports, group work based on MOOCs and globally speaking digital supports will be far more extensively used than today. But we are still only in the laboratory phase and we ignore for the moment how these new learning modes will fit together to better serve teaching efforts. We already know that digital approaches are more efficient than humans when it comes to learning repetitive sequences, such as are needed to learn multiplication tables. Well thought out, game-driven applications facilitate memorization, which is contrary to what we knew with time-worn exercises with children repeating reams of figures and tables by rote. Digital approaches act like taste enhancers (exhausters). Up front teaching from a dais will always exist, but its omnipresence will be compensated by active methods, learning will be action-oriented and activities will be collaborative, in groups …

Will the contents of teaching also change; if so, how?
Schools must be enabled to train young people capable of understanding and building tomorrow's world. To do so, a general cultural background must be instilled, including a technological input – algorithmic logic, encoding, etc. but must extend to all forms of general knowledge: law, geography, biology … new questions must be addressed such as the future destiny of digital data, the legal framework of car or home sharing, legal status for living organisms … all of this represents a major challenge for schools: they will be required to integrate new curriculum contents and assimilate ways to teach, preparing future adults for a digital world in which the frontiers between scientific specialties become blurred. Future enterprises will need bio-computer sciences, data journalists … the game will change name and the lines will shift, towards a new equilibrium. For example, when pupils in a same group are doing a 'TPE' (personal, monitored studies) after collective work, they get the same mark – which is crazy! This sort of logic is sketching out a world which we may or may not desire: one with competition, or one with collaboration?

What are the strengths and weaknesses of the French system faced with this digital tsunami?
Recently we visited a high school at the heart of California's Silicon Valley, on a level comparable with a good French lycée. The way we organize teaching facilitates social life and collaboration and allows time for sports, culture and the role of parents in the educational school circuit. In contradistinction, the French system trains young people with skills that are rarely equalled elsewhere in the world. French engineers are highly sought after recruits in the Silicon Valley. The idea that prevails in France that we have a bad educational system comes from our failure to fulfil the mission to reduce inequalities. If, in contradistinction, the target is to train elite managers, engineers, scientists for the international market places, then we have been very successful. France can turn out philosophers, engineers, managers capable of thinking seriously about the far-reaching changes in civilizations that we observe. We must now move on to a new era of encyclopaedic knowledge and know-how, breaking down the remaining barriers between specialties.

> France can turn out philosophers, engineers, managers capable of thinking seriously about the far-reaching changes in civilizations. We must now move on, to a new era of encyclopaedic knowledge breaking down the remaining barriers between specialties.

How may a digital world upset the economic model of education?
There are a great number of enterprises working today on the design of an offer that will combine face-to-face teaching and digital teaching, especially in the USA where universities fees are so expensive. Will one of these companies come up with a formula that will have as big an impact on schools as Amazon or e-Bay have had on book stores and small ads? In France, the private sector only represents 15% of the higher education institutions: could this signal the dawn of a new market slot? The future of such a market will also depend on the value attributed to digital tools and methods by the universities themselves and the labour market. If UTC approves the credits obtained by 'attending' MOOCs (which is only the tip of the digital iceberg) and if future employers valorise diplomas awarded under these conditions, the MOOC phenomenon will really take off. Otherwise, there will be a total flop. It will be for the labour markets to decide. ■

DID YOU KNOW THIS ?

there are 3 036 MOOCs in the world today

25% are European

53% of these deal with science and technology

Penn University

63% of registered MOOC followers are over 30 years of age

9% are students

www.openeducationeuropa.eu

THE DIGITAL WORLD AND SELF-IMAGE

Managing a digital self-image

Louise Merzeau, senior lecturer in computing science and communication (ICTs) at the University Paris Ouest Nanterre La Défense, gave a lecture Monday October 6, 2014 entitled "Face front – face left: can traces define a face? In the TTH seminar (Technologies and Human Traces) interdisciplinarity research organized by the UTC-Costech laboratory and the Institute Faire face (IFF).

Why is it important today for a young engineers/ entrepreneurs today to become aware of the image they give over the Internet?

Today, the digital world is more an environment than a tool. Indeed, it is increasingly present in our daily lives, even the most commonplace. For a student, for an undergraduate, a research scientists, or anyone who is going be active in the knowledge-based world, in innovation or in research activities, it is all the more important to raise questions about one's digital presence. Moreover, please note, I am not reducing this question to the sole 'image' aspect – terminology and connotation here fall somewhat short. What is radically new is what I call 'digital ID' or 'digital presence', where I refer to everyday presence and the seemingly infinite string of traces we leave all over the Web each time we log on. Having said this, the question is, how we are supposed to manage and control our digital identity? As I see it, there is no way to actually 'control' our image. Nonetheless, we still have to work on building up a coherent image of a digital presence. The issue is not so much to protect ourselves – a regularly served, prevalent argument – but rather to publish our personal data intelligently, viz., by building up spaces, whether they be our own, personal spaces or shared, public spaces.

Do professional social networks provide a way to manage our traces on Internet?

As I see it, the key point is to be present in spaces where the traces collected do not refer to private individuals as such, but more to the building up of a collective memory of events. For example, when you have open archives in science, these are shared spaces. The archival deposits obviously refer back to the research scientist who wrote the report(s), but the objective of such archives is to set up a shared knowledge area. And it is my opinion that scientists and students should take position on this issue. Naturally this is not always easy because we must take into account questions of copyright and assessment procedures for the authors, especially when they are public research scientists. And private persons should encourage their laboratories or their institutions also top take position. This is a far-reaching, radical and admittedly difficult change inasmuch it will upset a lot of set behavioural patterns – but is, I feel, absolutely necessary.

Could we even imagine not being present today on the Internet?

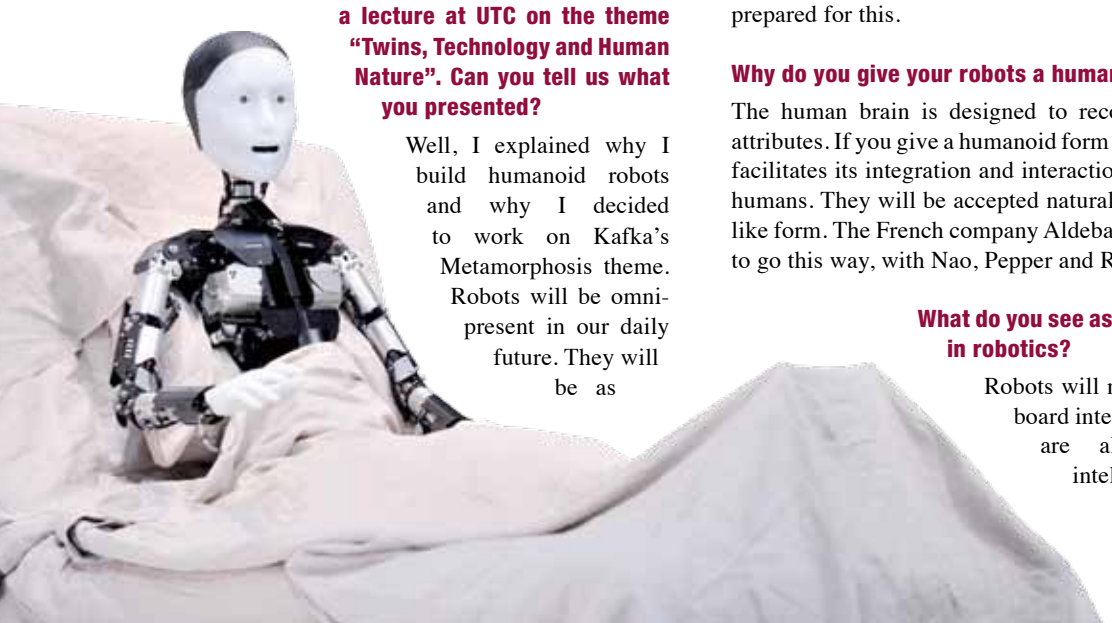
In our Western societies, it is almost impossible to be absent from the digital environment, because this would mean being literally cut off from the omnipresent social environments. Even if someone does not have an account on a social network, no blog … the chances still are that they exist on the Internet, especially in the university and academic spheres. And even if it is not yet the case today, every conference, all academic publications or work will soon be transferred to an appropriate digital environment. ■

plus d'infos ▶ **http://merzeau.net/tag/identite-numerique/**

ANDROID

Sci-Fi, an inspiring, driving force

Prof. Hiroshi Ishiguro has already created his robot twin – fabulously alike. The professor is a genius for humanoid design and presented one of his machines in the 'Metamorphosis show' held at the Espace Legendre, Compiege, November 27. The show is an adaptation of the Kafka novel by play writer Oriza Hirata. Could humans and robots be interchangeable one day, as seen in this experiment by Gregor Samsa who is transformed on stage, not into a "monstrous insect" but into a no less disturbing robot?



Just before this show, you gave a lecture at UTC on the theme "Twins, Technology and Human Nature". Can you tell us what you presented?

Well, I explained why I build humanoid robots and why I decided to work on Kafka's Metamorphosis theme. Robots will be omni-present in our daily future. They will be as commonplace as smartphones today; we should be prepared for this.

Why do you give your robots a humanoid form?

The human brain is designed to recognise human attributes. If you give a humanoid form to a robot, this facilitates its integration and interactions with living humans. They will be accepted naturally in a human like form. The French company Aldebaran also chose to go this way, with Nao, Pepper and Romeo.

What do you see as the next step in robotics?

Robots will need more on-board intelligence. They are already more intelligent than humans in certain functionalities, such as calculating or memorizing. But we need also to take this further, and attribute intentions or allow for their own desires. The next stage will be to implant consciousness. That is the area where I am doing research today and I hope to come up with some definitive results in the next 5 years. In the framework of my research, the work we did at the Compiegne Theatre. By placing a robot face-to-face with art, we can learn how the robot should (re)act in the most natural way possible.

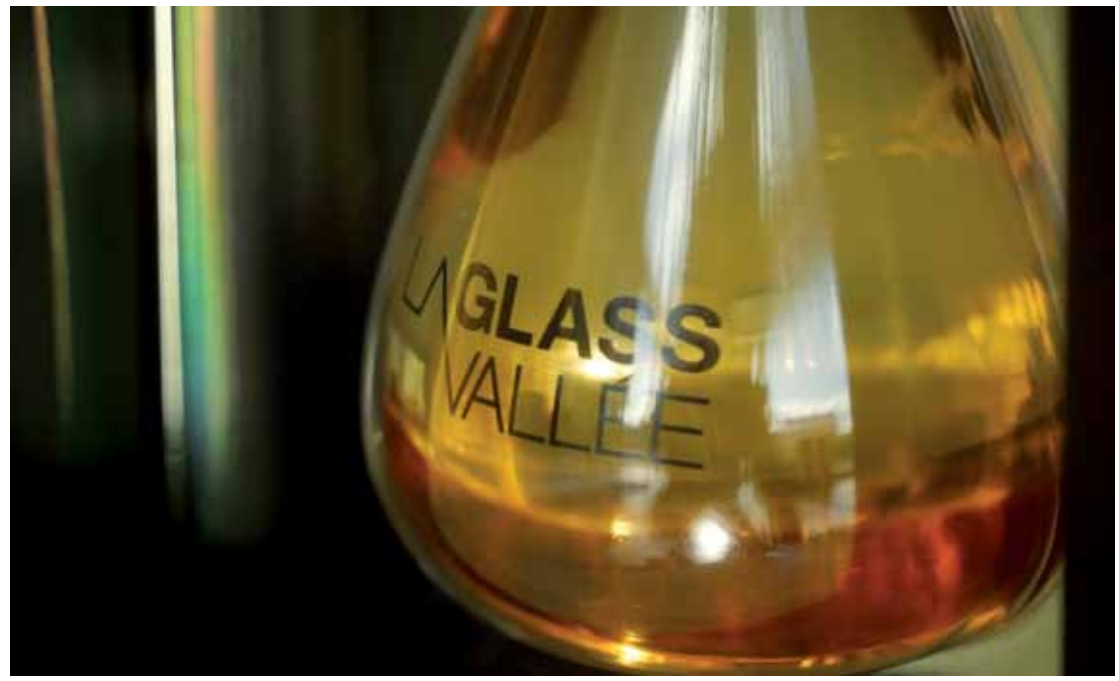
Are we living in a Sci-Fi novel?

Sci-Fi is a source of inspiration for scientific research. It is a driving force and it provides for all the imagination science and technologies need to progress. ■

An engineering project

It was a rather special bottle that was presented in October 2014 by Glass Valley: the result of 3 years' collaboration with UTC, recalling a fire-coloured droplet, symbolising the renewed methods implemented by the traditional glass-making companies, who have today all adopted an innovation-intensive approach. Bruno Ramon presents this "first" project that benefited from services at the UTC Innovation Centre.

North France's Glass Valley corresponds geographically to the river Bresle basin, where some 60 companies, all specialists of glass-making for both the perfume sector and alcohols, are installed. They are members of the "World Pole for Luxury Bottling", employ some 7 500 persons and produce 70% of all luxury bottles produced in the world. This is an often neglected richness, facing recent competition from Eastern Europe and Asia. "Competition led the local company heads to rapidly rethink their strategy, and committing themselves to more innovation seemed to them to be the only way to react positively, by reducing production time and costs. After an unsuccessful exercise with a consultant agency, the Upper Normandy Region approached UTC, on the grounds that with our geographic proximity to Bresles and our know-how when it comes to engaging in innovative work, they put together a team of engineers to identify way to improve their production and deploy new work methods" details Bruno Ramond.



A collective action for 500 000€ over 3 years

The project has a budget close on 500 000€ and is supported financially by the Upper Normandy and Picardie Regions for a 3 year period. It was one of the first collective actions engaged by the UTC Innovation Centre, even before the latter actually was built. Two graduates from UTC, Alioune Deme and Julien Bahain undertook a wide-ranging analysis of work methods and solutions already proposed (both technical and organizational) "We analysed each proposal for technical improvement, notably concerning the 'traceability' of the bottles in an effort to stymy counterfeit production and also an inkjet print process to mark the bottles" adds Bruno Ramond to illustrate the work done. "But the real difficulty lay in the fact that Glass Valley was incapable of drawing benefit from innovation because of its organization, a heritage from a quasi-feudal system between the master glass-makers and the sub-contractors. This organization totally halted the possibility to innovate, to the extent that the glass-makers were enforcing their solutions without taking account of the constraints on the glass-smelters, the bottle preparation makers, the mould technicians, the decorators, etc. We realized that some of these companies, each excellent in their respective parts of the production 'line'; simply were not aware of the full production cycle for a glass bottle".

This particular bottle of perfume is not for sale; it will be used to promote the excellence of the collaborating companies for their clients, their partners and their potential clients

Modelling the engineering

UTC then carried out a study on flow patterns among the various Glass Valley companies, with a single bottle design as a guide-line. "We played the role of main contractor to model the engineering requirements and set up a very detailed specification that took into account the specific features of each sub-contractor and we came up with a design that met the criteria and which needed a minimum number of organizational return paths", explains Bruno Ramond. From early bottle design to the finished bottle or 'flacon', including the creation of the perfume concentrate (by the city of Grasse PASS competitive cluster (Perfumes, Aromas, Flagrances, Scents)), this mock-up project also fits in well with the 100% Made-in-France Government credo, serving the valorisation of the exceptional know-how that exists in France in the perfume sector. This particular bottle of perfume is not for sale; it will be used to promote the excellence of the collaborating companies for their clients, their partners and their potential clients. It therefore represents a starting point rather than a conclusion: the aim now is to maintain and develop new production processes for the purpose of preserving a wide-ranging capacity to innovate further in the Glass Valley context. "Other aspects should also be called to evolve, such as capitalising on rich local know-how. These skills go back along way and form a heritage – they are the results of human experience and are difficult to transmit. What we need here is some digital modelling of the heritage" envisages Bruno Ramond. Glass Valley drew on its experience with UTC to make a film that throws light on the partner companies and their skills and aims at increasing the attractiveness of glass-making professions for young people, in a difficult recruitment period.

Demonstrating the added value of the UTC Innovation Centre

As far as UTC was concerned, this Glass Valley project enabled a certification of the future Innovation Centre and led to a large scale site, with several dozen partners. "I was a test-bed project that produced excellent results, in which we invested a lot of time and energy. Our two engineers were present at least two days a week, in the field, with the Glass Valley partners, to build up an area of mutual trust and to propose the most relevant solutions possible. Proceeding this way, we were able to demonstrate the real added value of the UTC Innovation Centre", concludes Bruno Ramon. Here we now have a Centre capable of preparing the future of a French industrial sector! ■

AGENDA

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Official inauguration of the UTC Innovation Centre in the presence of Minister Geneviève Fioraso (HE and Research)
Jan. 12, 2015
The UTC- Innovation Centre will be officially inaugurated in the presence of Ms Genevieve Fioraso, Minister for Higher Education and Research. The ceremony will provide an opportunity for guests and institutional representatives (those notably in charge of supporting enterprises startups: INPI, BPI (formerly OSEO) …) to see the platforms operational at the Centre and hear more about various projects, by students, research scientists, lecturers.

The Phiteco seminar on "Spaces and techniques: configurations, reconfigurations"
Jan. 19-23, 2015
Each year the UTC-Costech laboratory organizes its Phiteco Seminar; this year the theme will be "Spaces and techniques: configurations, reconfigurations". Participants will no doubt be interested in the implications of techniques on space configuration and reconfiguration, whether these spaces are perceptual space, action space, meeting places, presence places, open, shared spaces, etc., from various points of view: a phenomenological approach, technical conditions for a space to exist, the impact of Internet on the spaces and territories and likewise the way a "global environment" is constituted.

1st TEDx event at the UTC Innovation Centre
Tuesday Jan.20, 2015
UTC students are organising the forthcoming TEDx event, on the theme "Let's observe, imagine and implement". Six highly reputed lecturers will give talks (each less than 18min). Among the guest speakers will be Yann Fleureau, CEO of Cardiologs Technologies declared laureate of the "World Innovation 2030 Competition".
www.tedxutcompiegne.com/

A UTC workshop on the theme "Integration of electro technologies in a bio-refinery"
Jan. 27-28, 2015
The UTC-TAI team (Agro-Industrial Technologies) is organizing a workshop on the theme Integration of electro technologies in a bio-refinery" (ElectroBioRef 2015) in a collaborative venture with the IAR industrial cluster (Industry and Agro-resources, with support from the European COST networkThe workshop will provide an opportunity for expert representatives of the European community in the fields of bio-refining and electro technologies (industrialists and academics) to meet. The workshop will hear presentations of the latest scientific and technological developments applied to bio-mass, bio-technologies and to industrial by-products.

the Labcom DIMEXP seminar
Tues. Feb. 10, 2015
With its certification by the competitivity cluster I-trans (financially supported by the Government research agency ANR) will take place at the UTC Innovation Centre, Feb.10, 2015, 09h30 to 12h30. Speakers come from both industrial spheres (Bouygues Bâtiment, Renault, ...), from R&D divisions … and fro the universities and similar: Strasbourg, ENS Cachan... They will present their ongoing work, viz., software packages with high added value for digital mock-ups in multi-disciplinary collaboration, to handle casxes of data heterogeneity.

STUDENTS PROJECT

Mare Nostrum, a challenge to serve the Mediterranean

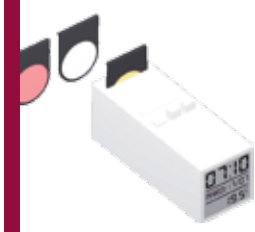
Their journey round the Mediterranean is now at an end. Louis Wilmotte and Douglas Couet spent 15 months paddling their 2 seat sea kayak for a project known as Mare Nostrum, for the purpose of contributing to making the riches of the Mediterranean better known and to participate in two scientific research projects.

"We originally planned for a 12 month tour, but a set of unforeseen events and the spate of tendinitis made this a bit longer", says Louis Wilmotte, with a smile. Louis, last year, was an undergraduate at UTC during a degree in pluri-technical maintenance. Today he is pursuing his studies at Nice, where he has not in fact left the sea: he is doing his alternating training as an electrician on board Tara, a ship equipped for scientific expeditions to measure the impact of climate change on the oceans. "Even if the changeover was a bit rough, the alternate programme proved a good way to return to 'normal'. My mission with Tara is to measure power consumption on-board and to integrate this with the input of renewables", he explains. Douglas Couet, a student at University of Paris 6 Marie Curie (UPMC) when the Mare Nostrum adventure started, has now joined the CNRS marine biology station at Roscoff in Brittany.

The Odyssey repeats itself!

Our two super-enthusiastic (sea-life and environment) students paddled together for 15 months, and during that time they made 2 types of data gathering: on one hand, sound recordings, to contribute to our understanding of how sound pollution affects whales (cetaceans in general) and, on the other, to gather samples of an invasive, toxic species of algae, ostreopsis ovata (a unicellular, microscopic algae). "The research scientists with whom we were working were happy to receive our acquisitions. Unfortunately we lost the hydrophone during the winter, when the kayak capsized in the middle of the night, just off the Italian coastline at the very spot, where in the Odyssey, Ulysses just managed to escape the Cyclops. Indeed, this was one of the hardest moments of the expedition …" Anyway, the samples we took could be used scientifically and this adventure may lead on to new kayak based expeditions. "From a human point of view, it was quite extraordinary! We now have an address book, of all the friends we encountered every 30km from Gibraltar to Istanbul: at every mooring, we were made very welcome, insomuch as people really liked the idea of the project, even if some of them thought we were stark mad, especially in the winter sections. Encounters like these helped us with the physical challenge of the tour", underscores Louis. Their kayak is now in Istanbul, sold to the French Lycée to enjoy a second life on water. And the Mare Nostrum project has strengthened their convictions and desire to choose a job later where they can contribute to preserving the environment. ■

d'infos plus **www.marenostrum-project.com**



GRAND PALAIS

You are never too young to innovate

First French inventor to be selected for the "Google Science Fair", young Guillaume Roland presented an olfactory alarm clock he had designed to compensate for his own difficulties to wake up. Today he is working on the marketing/sales phases of his alarm and has come to UTC to do so.

Initial difficulties were technical in nature (programming, etc.). But, in his garage setting, Guillaume Roland found appropriate solutions quickly. "The most complicated thing was to convince people that they can indeed be awakened by a scent. My first guinea pigs were in my family and among friends. Our sense of smell is not very well-known or developed, even if scent marketing has started to democratize the field. At the Google Science Fair, I met a research associate professor, Damien Colas, from the Biology Department at Stanford University, himself working on scientific analyses of sleep/insomnia and scents and he suggested if I helped make his work known to the general public, he would be happy to act as scientific guarantor for my invention", says Guillaume Roland. This young 18 year old Frenchie has invented an alarm clock that releases a scent you choose to bring you out of sleep mode in just 30 seconds, or 1 minute at most. Guillaume himself suffered from acute sleep-in syndrome (ASIS)(!) and enjoys to be awakened now by a waft of pepper mint: "The olfactory sense circuit is in fact partly independent from the normal brain circuits, so being awoken by a scent avoids you getting frustrated to start your day and guarantees a soft wake-up process!" After some conclusive testing on volunteer inmates at his father's retirement residence, the next step was to convince the giant Google.

Marketing and sales in early 2015

"The 14 other projects were mind-blowing and I was one of the few whose English was not as fluent as it should be. The ambiance was terrific with really efficient presentation of the projects, good meetings and incredible visits", he adds. Yet, although he was not declared laureate ay the Google Fair, Guillaume – who hails from Nantes – left the USA with the aim to market-ready and sell his alarm; the plans for this are well under way now. "I was chosen to exhibit the Sensorwake® at the Grand Palais venue in December, for the Osons la France event and I hope to launch sales early 2015 with a kick-starter campaign to see how the product goes down in the market place", explains Guillaume who came to UTC at the start of academic year 2014, one month later than normal because of the European Lepine Inventors' Competition. And he is totally optimistic – "UTC is our MIT when it comes to Innovation. As soon as I get some free time I shall go visit the UTC Innovation Centre, to check out my ideas for some other projects I have in mind". ■

PUBLICATIONS

Ensuring successful conditions for multi-actor co-operation; the requisite conditions

Gilles Le Cardinal, emeritus professor at UTC, recently published two books, « Construire la confiance, de l'utopie à la réalité : la PAT-Miroir Attitude »[Building trust, from utopia to reality: the PAT-Mirror Attitude] and « Les dynamiques de la rencontre »[Dynamics of Meetings], that sum up 30 years of research into inter-personal communications.

In the 1980s, this senior lecturer in Chemical Engineering at UTC changed over to a new professional path. "After 3 years as a benevolent worker helping persons with mental handicaps back to autonomy, I decided to move to ICTs. I created a course entitled "Inter-personal communication and sustainable co-operation in the UTC-TSH Department (Technology and Society)".The questions Prof. Le Cardinal addresses in his books are relevant to all human relationships: how is trust built and how can it be destroyed? What processes facilitate co-operation engaged in a multi-actor projects? How do you assemble the conditions to ensure success in a partnership?

'PAT-Mirror or the challenge of a deciphered encounter

"With our contemporary surge of social networks, there are very few research scientists who study inter-personal encounters and on team-building", stresses the author who has identified no less than 28 underlying processes the most salient for which is "trust dynamics". The model he proposes allows you to identify in advance possible areas of friction and difficulty and following analysis, to propose relevant, remedial solutions. The author sets out rules for sustainable co-operation as well as a code of ethics for e counters. The task then remained to implement the underlying concepts and ideas.

Project management methodology assisted by a professional software package

The method, code named PAT-Mirror (for the French terms: Fear, Attraction, Temptation in a mirror) enables research here to become operational and reinforces co-operation, which is an intrinsically unstable matter. It led to the creation in May 2012 of the company "Cooprex International" which proposes its services in organizations which are changing format and trains consultants to use the method."Over 500 applications have been carried out to date, 300 of which are in the industrial sector, about 100 in administrations and hospitals and yet another 100 in associations", announces Gilles Le Cardinal proudly. Examples are to be found in Compiegne, where 140 secondary school teachers used the method to draft the Lycée charter (for two school establishments). With the Compiegne clinic Saint Côme, Cooprex International led to a reorganization of infectious wastes management on their new premises. "We also helped regroup the back-offices of the national TV channels France 2 and France 3 …" adds Gilles le Cardinal. "Given that most UTC research scientists take part in transverse research projects with other teams and with numerous enterprises, I wish to help them think about the requisite conditions that would ensure success of their cooperation! ■

PRIZES

UTC's innovation eco-system rewarded

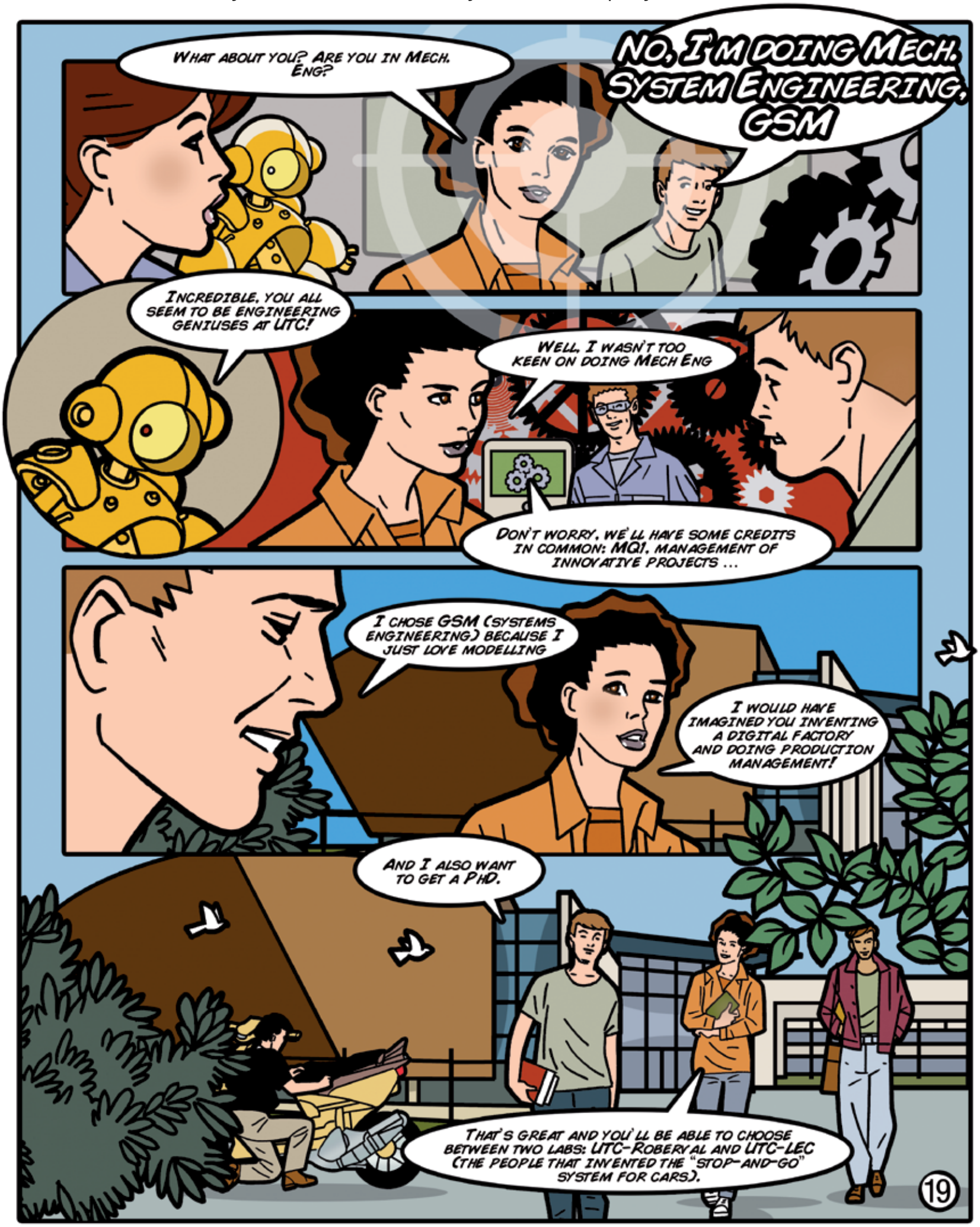
UTC, its students, host city Compiegne, confirm their spirit of innovation.

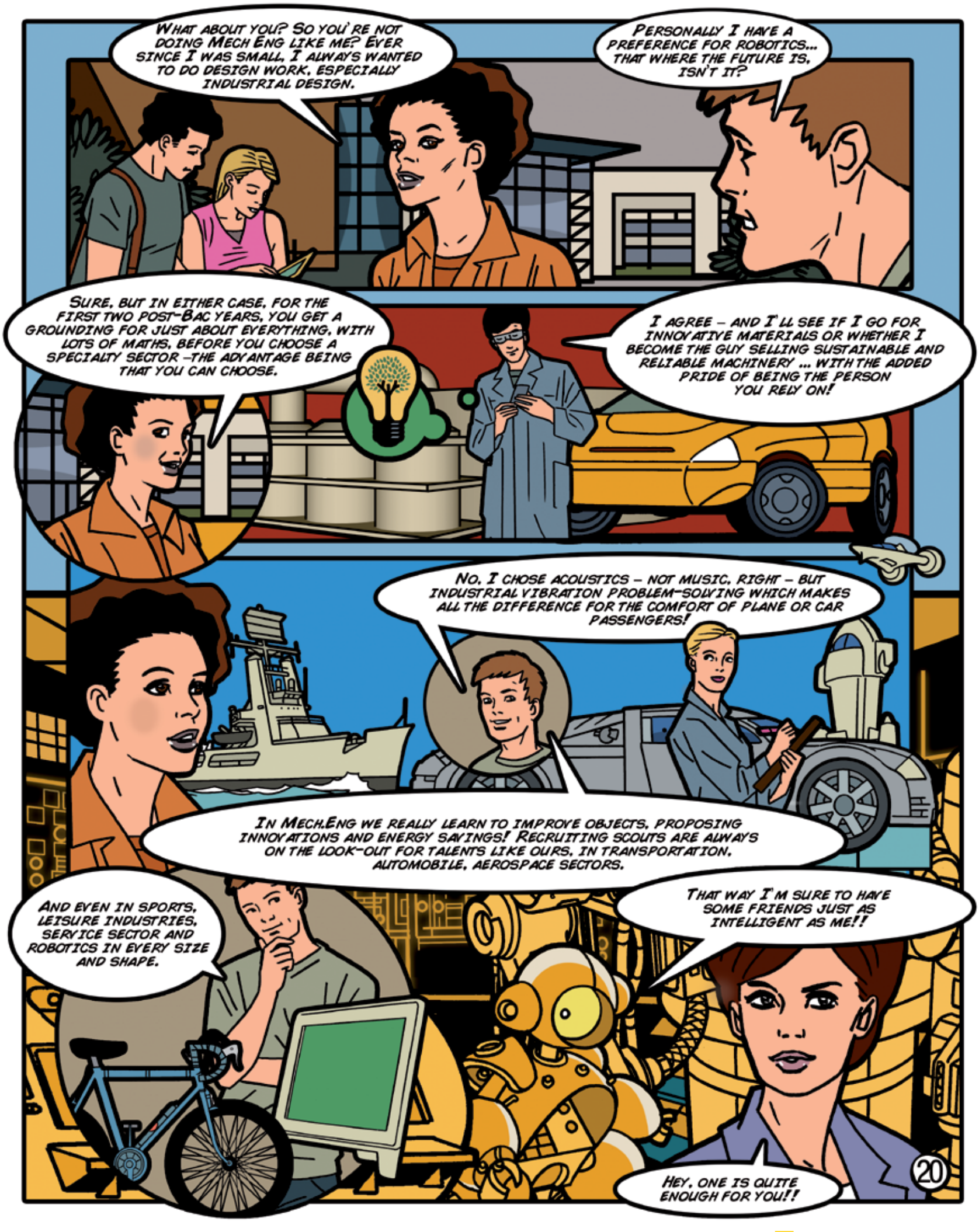
With its accumulated experience of 40 years since it was created in 1972, UTC has attained the reputation of one of the world leaders in innovation and engineering. We can cite, for example, its 7th place rank in Le Monde, Dec. 2014 –for France's engineering schools), or its 2nd place for 'proximity factor with enterprises' awarded a few days ago by the newspaper L'Etudiant. We can also recall the other prizes frequently awarded to UTC undergraduates in a wide variety of specialties, e.g., Amir Khaterchi (Master's degree course NQCE) who was awarded the French Prize for Quality offered by the French Association to Promote Performance Quality, and likewise the "prize for a promising engineer" to self-employer start up graduate Alice Froissac. UTC President, Prof Alain Storck, was pleased to hand over this particular award personally.

By way of a proof that Compiegne offers an excellent environment, the city was ranked #1 (for towns with populations between 70 000-100 000) in the "Business friendly cities" list made by the magazine Expansion; this is a ranking that identifies the cities that are most conducive to setting up companies, according to 3 criteria: existing infrastructures, ecosystem and training possibilities. Her we have 3 criteria which fit Compiegne well – its proximity with the A1 motorway and the Charles d Gaulle International airport for Paris; the local training institutions of UTC and ESCOM and a high number of R&D centres (not forgetting the support and accompaniment of the Greater Compiegne Agency (ARC). The forthcoming official inauguration of the UTC Innovation Centre will reinforce even further this local ecosystem which favours and facilitates entrepreneurial development.

At another distinct level, but contributing also to proving its capacity to pioneer academic avant-gardist work, UTC received distinction at the 13th edition of the "Communication Trophies", Cannes 2014, end-November. Various criteria came to play here too (accessibility, strategy, graphics, quality and originality of the supports such as is bilingual applications and a highly active WebTV and action on social networks. UTC - with some 500 other candidates - was ranked 2nd in the category "The Jury's Special Prize for overall communication quality". ■

On its 40th anniversary, UTC rewrites its history, in comic strip style : **In the heart of the Future**




WHAT ABOUT YOU? SO YOU'RE NOT DOING MECH ENG LIKE ME? EVER SINCE I WAS SMALL, I ALWAYS WANTED TO DO DESIGN WORK, ESPECIALLY INDUSTRIAL DESIGN.
PERSONALLY I HAVE A PREFERENCE FOR ROBOTICS... THAT WHERE THE FUTURE IS, ISN'T IT?
SURE, BUT IN EITHER CASE, FOR THE FIRST TWO POST-BAC YEARS, YOU GET A GROUNDING FOR JUST ABOUT EVERYTHING, WITH LOTS OF MATHS, BEFORE YOU CHOOSE A SPECIALTY SECTOR –THE ADVANTAGE BEING THAT YOU CAN CHOOSE.
I AGREE – AND I'LL SEE IF I GO FOR INNOVATIVE MATERIALS OR WHETHER I BECOME THE GUY SELLING SUSTAINABLE AND RELIABLE MACHINERY ... WITH THE ADDED PRIDE OF BEING THE PERSON YOU RELY ON!
NO, I CHOSE ACOUSTICS – NOT MUSIC, RIGHT – BUT INDUSTRIAL VIBRATION PROBLEM-SOLVING WHICH MAKES ALL THE DIFFERENCE FOR THE COMFORT OF PLANE OR CAR PASSENGERS!
IN MECH.ENG WE REALLY LEARN TO IMPROVE OBJECTS, PROPOSING INNOVATIONS AND ENERGY SAVINGS! RECRUITING SCOUTS ARE ALWAYS ON THE LOOK-OUT FOR TALENTS LIKE OURS, IN TRANSPORTATION, AUTOMOBILE, AEROSPACE SECTORS.
AND EVEN IN SPORTS, LEISURE INDUSTRIES, SERVICE SECTOR AND ROBOTICS IN EVERY SIZE AND SHAPE.
THAT WAY I'M SURE TO HAVE SOME FRIENDS JUST AS INTELLIGENT AS ME!!
HEY, ONE IS QUITE ENOUGH FOR YOU!!
20

The prime need for flexibility and stamina

Christophe Rosset is the Managing Director (Continental Europe) for Page Executive, one of the three brands of PageGroup, a specialist recruitment agency present in 35 different countries. Christophe Rosset graduated from UTC in 1987 with the specialty Bio-Industries.

"With a passion for bio-technologies after my Baccalaureate D, I became a keen and regular reader of the magazine BioFutur. UTC was clearly a reference institution in the field and I loved both the campus ambience and the excellent relationships we enjoyed with our lecturers, all of whom were high level specialists, plus the contacts we had with enterprises via our research centre … I have some great souvenirs of our contacts among students, notably when we were doing group work", recalls Christophe Rosset. After graduating, he did his military draft period overseas in the island State of the Dominican Republic where he worked at the local Maison de France on various agricultural development programmes, in a collaboration with the Dominican and French ministries for Agriculture. He then moved to L'Oreal becoming one of the Group's production engineers in a subsidiary specialized in shampoo and cosmetics formulating. "My job there was to supervise the fine chemistry processes, before I moved to Cardiff, again with the L'Oreal Group and I was appointed to a position of industrial manager", he adds. At that point our young graduate was tempted by entrepreneurship; he took over his own family's business for a while which they finally sold. He addressed himself to the Michael page specialist recruitment agents, looking for a job in the cosmetics sector. "They were looking for an engineer to manage recruitment of other engineers. Two weeks later I signed my contract and I've been with tem now for 18 years"!

Evolving within PageGroup

Thus, Christophe Rosset was one of the first engineers to join the Group, for the purpose of developing the "Engineers and technicians" branch, examining and selecting candidates for industrial enterprises, ranging from R&D, production lines to logistics and purchasing. From 1996 to 2001 he set up several specialist divisions Property & Construction, Logistics & Purchasing and finally Health. In 2001 Christophe Rosset was appointed to the Board of PageGroup in France and in 2006 he left with wife and family to head for Mexico. "The objective assigned was to create the Group subsidiary in Mexico, ex nihilo. That experience as amazing, both in terms of the entrepreneurial experience gained and for the discovery of the local cultures and the encounters I made in Mexico. After 5 years there, the team had 90 collaborators, 70 of whom were consultants. Our role was not to focus on 'ex-pats' but to recruit the best local talents for this emerging market where the needs for skilled labour were very important, ranging from banks to human resource, health and property management …" Christophe Rosset returned to Europe in 2011 when he accepted the position of Managing Director for Belgium and Luxemburg. Since the beginning of 2014, he is general managing director for Page Executive for Continental Europe. "PageGroup has 3 brands: Michael Page for the historic activities of recruitment advice and counselling, Page Personnel for those with initial professional experience and Page Executive for the recruiting of executive level managers. Today, our international synergy must be bolstered", details Christophe Rosset.

The search for new dynamics in Europe

Christophe Rosset's mission is therefore to strengthen the mark in Europe, as well as the Page Executive networks that specialize in Industry, Shopping malls, Financial Services, Health, Human Resources and Manpower management, etc., but he keeps himself on a par by continuing as a consultant for the industrial sectors. "Job markets in Europe are relatively stable, but we must seek a certain fraction of renewal after a period of cost optimizing between 2008 and 2012. Enterprises are now picking up again in terms of design of new products and services and to this end have begun recruiting new skills, in a cautious context as far as salaries offered are concerned", says Christophe Rosset. For young graduates from UTC, this expert in the recruiting game advocates that they acquire and develop a wide international vista, opening the mind and finding ways to avail of opportunities for positions carrying high value responsibilities. As he sees things, the qualities you need to evolve favourably in an enterprise are flexibility (to better understand the specific challenges of the market-place so as to be able to react quickly and rapidly as changes emerge), and staying power or stamina. "Stamina is a quality that is rarely underlined, but it is needed when it comes to conveying a dynamic thrust for one's ideas, to build on exchanges, to progress rapidly". Christophe Rosset offers one final piece of advice: that candidates analyse the job but also clearly assess the sector of activities they have in mind. "Young people are generally trained for a profession, but they do not often question what the future might be in that sector whereas other sectors might be far more rewarding. This approach is primordial if you want to love your job!" ■

BIO EXPRESS

1987 : Graduated from UTC

1987-1993 : Engineer with the Groupe L'Oréal, first in France then in Wales

1993-1995 : Company head as Deputy Managing Director, family business H.Rosset

1996 : joined PageGroup, France

2006 : Managing Director Mexico to set up local branch offices for the 3 PageGroup brands: Page Personnel, Michael Page and Page Executive

2014 : Managing Director (Continental Europe) for Page Executive

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