

10

TECHNOCITÉ,
2004-2014
10 DIGITAL YEARS
IN MONS

D/Y

/M

/ ITW: **THIERRY DUTOIT**

DIRECTOR OF NUMEDIART PROGRAM AT UMONS

INTERVIEW BY JACQUES URBANSKA

/NUMEDIART WHEN RESEARCH AND TECHNOLOGY TAKE AN INTEREST IN CULTURE

It's a little-known fact that Mons 2015 was instigated as early as 2004. Recognised as *Cultural Capital of Wallonia* in 2002, a few years later the city of Mons announced its candidature for the title of *European Capital of Culture*. Culture was already one of the five priority axes of the City Project. The result was a tangible cultural dynamic in Mons, and the press were already talking about a possible resurgence of economic activity, based on the digital economy, in a *Digital Innovation Valley*.

In this favourable context, a small group of teachers and researchers from the UMONS¹ decided, in 2005, to launch a vast research program. Thierry Dutoit, instigator and now project director, explains: "Open to culture, we foresaw the importance of collaboration between the arts, science and technology for the development of products and services linked to the digital economy, and we gathered an essential mix of skill-sets required for such a project. We therefore introduced the *numediart* program in an appeal to the Wallonia region centred on programs of excellence outlined in the Marshall Plan. It quickly received the support of the Region. I am very grateful for the confidence they showed us and I am thankful that the Mons decision-makers who, without realising it, directed our creative energy towards Mons 2015."

1 // Still at that time the Mons Polytechnic

2 // Which is essentially seen via what Europe has identified as the cultural and creative industries, CCI

3 // For example, make available technology which is still at conceptual stage in research terms.

4 // Subsidised by Smart People/Creative Wallonia.

5 // *The Journées d'Informatique Musicale* in 2012, *NOLISP* and *INTETAIN* in 2013.

6 // CUlture et TEchnologie.

7 // He was made a *honoris causa doctor* of UMONS in 2009

What gaps did the *numediart* project fill?

What is the current situation?

Thierry Dutoit: We gradually realised that the development of *digital creativity*² is essentially faced with three obstacles: technological complexity, the lack of ad hoc training and the difficulty in starting joint-production projects. Since 2007 we have been progressively tackling each of these problems. In *numediart* we have added to our research mission that of engineering support. This is a recurring request from the artists and entrepreneurs who contact us: the technological viability of complex ideas and the budget required. The answers that we can offer often include technical advice, helped by our knowledge of the latest developments and practical solutions (software and/or materials). Only then can we offer more in-depth assistance³. In order to achieve this we have had to take on and train qualified personnel, able to rapidly respond to such requests, familiar with current technological tools.

We have also equipped our lab with a significant amount of material. In terms of training, in 2011 we started evening workshops called *Créactifs!* destined for university students. They are designed to give a hands-on approach to digital creativity, such as Processing, Arduino, OpenFrameworks... and more broadly to creative programming (with Android or iOS applications). We extended this initiative to include sixth-form students in 2013 via the educational CYBERPACK⁴ project. We also organised several international conferences in Mons⁵ as well as *master classes* CUTE⁶ in 2013 and 2014. For example we hosted Miller Puckette, inventor of MAX and PureData, professor of the uCSD in San Diego, who is now very much a friend of our establishment⁷. Finally, in 2014, we did the groundwork for an option in the cultural and creative industries. It will be included in the curriculum for IT students, engineers and economic scientists and

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will therefore be truly inter-disciplinary. It's a significant first in the university: students from different horizons will meet for joint projects, each adding their own skill-set. The lessons associated with this option will enable students to become familiar with mechanisms for the financing and administration of projects in the field of CCLs. Business people will be involved in the seminars.

Is there a project or a structure in particular which inspired the birth of *numediart*?

There are in fact only a few structures like *numediart* in the world. We could mention, amongst the better known, the IRCAM in Paris, ZKM in Karlsruhe, or HEXAGRAM and CRRMIT in Montreal. We have very good links with these different structures whereas none of them are 100% similar to us. IRCAM is certainly the closest, but is only focused on sound.

If you had to make a rapid appraisal of the *numediart* project, which main features would you highlight?

Firstly we have been fortunate to be able to form a solid network. It is without doubt the part that requires the longest time and is the least visible, but it is nonetheless the most essential. Thanks to the numerous contacts made between researchers, artists, cultural operators, firms and other research centres, our activity is today recognised both at local, regional and international level. There have also been numerous longer-term research projects that have enabled us to raise funds (again supported by a range of partners⁸). They will contribute to keeping our *senior* researchers who have been with us from the beginning, and via them, the dynamism of the institution itself. Finally, I would like to highlight the fairly unique infrastructures that we have been able to put in place thanks to a variety of financial sources. Our *numediart* lab is equipped like an *all digital* stage scene and allows the researchers to test the technologies developed in the context of our projects under real-life conditions. Besides the HD video equipment and audio 8.1, the lab has, for example, a motion-capture suit (IGS190), a system for facial motion capture (OptiTracks) and a professional system that can follow a gaze. To this will shortly be added an optical motion capture system⁹. Lastly, we are in the process of installing a *FabLab* involving TechnocITé, ARTS², the 'Haute École' in Hainaut (HEH), the Maison du Design amongst others... all of this thanks to the support of UMONS of course, but also thanks to Google.

8 // FNRS, Wallonia Region, European projects, the program of Interactive Experiences by Pictanovo-Lille, etc.

9 // Thanks to joint support from FNRS, Europe and the Wallonia Region.

10 // nataliademello.com

11 // creaceded.com

12 // nicolasdalessandro.net

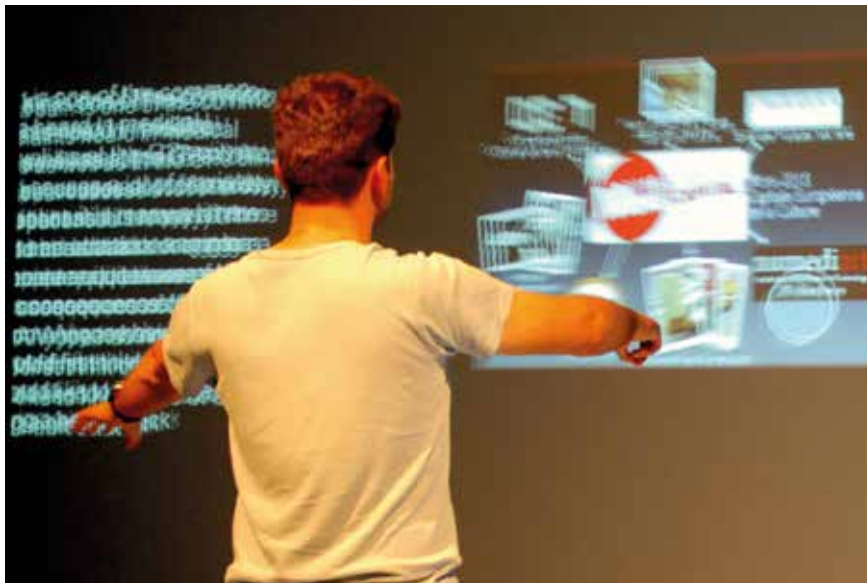
13 // tanastringquartet.be

14 // blackmoon-productions.com

Are there projects which have gone beyond their initial remit?

In fact there are quite a few. One of the first very interesting artistic experiences was developed in the context of our MORFACE project, in collaboration with the *Métamorph'Oz*¹⁰ collective. The installation that resulted allowed an observer who spent long enough looking at a reproduction of the *Mona Lisa* to see the woman's face be progressively transformed into his own image. The development of this mechanism required collaboration between artists (for the idea and the final concept), researchers (for the analysis of the visitor's face) and the Mons Company Creaceded¹¹ (who provided a tailor-made version of their morphing software). This installation which enjoyed and is still enjoying great success, has applications which go beyond digital art: this type of interaction can be fully used for digital signage applications, for example for interactive street advertising. The musical instrument *Handsketch* was used in several performances by its inventor Nicolas D'Alessandro¹², notably in *ChoirMob* in collaboration with the University of British Columbia in Vancouver, or during concerts with Jean-Paul Dessy. It is currently being used in research work by the *Tana*¹³ quartet. This is a great reward for his work: to create a new musical instrument that is appreciated by musicians is a considerable challenge... In another domain I could also mention our involvement in the *Parallaxe* project by Patric Jean and Blackmoon productions¹⁴. Based on an original idea by Patrick and his team, we produced a *digital window* onto a virtual theatrical space. When the visitor to the installation approaches this *window* (i.e. a video screen), the content of the window adjusts to simulate an effect of natural parallax. The layers of video content were produced by Blackmoon Prods. And then there are also the numerous mapping3Ds on which we worked in Namur, Maubeuge and Mons in liaison with digital artists and companies specialising in projection.

Nicolas d'Alessandro, Handsketch © numediart



Espace numediart © numediart

What is your method for project management? Have you perhaps changed your approach over time?

We have really learned a lot... From the outset our approach was based on a short time period (typically three months). We have maintained this approach which enables us to respond rapidly to requests and directly test technological ideas. Each three-month period culminates in the public presentation of results and includes, halfway through, a one-week workshop at which the researchers involved are together in the same venue¹⁵: *research residencies* to use the artistic vocabulary.

Over time, however, certain projects were spread over six months and a certain continuity in our projects appeared which initially matched the three axes that we had planned to follow. This moved progressively towards the six current themes: motion capture, performing media, intelligent space, multimedia navigation, 3D design and increased reality. Lastly, we have also become gradually aware of the importance of making a better distinction between long-term research and immediate engineering support, as well as adding on-going training in conjunction with more overt economic activity.

It is with this aim in mind that we are currently finalising the *DigiSTORM*¹⁶ program which aims to create a genuinely *LivingLab* to serve the cultural and creative industries' sector, as well as, in a broader sense, the ICT sector. The main thrust of *DigiSTORM* will be the new digital territories, the cultural and creative industries that are at the heart of the urban landscape. We are expecting a lot from this project!

What has changed with the ending of your program of excellence?

The *numediart* Institution was inaugurated in 2010. It was the first of UMONS' ten research institutions today. This step was decisive: in this way UMONS has ensured the continuation of our research work well beyond the *numediart* program of excellence which ended in August 2013. Since that time we feature across all the University's communication networks. The number of research centres linked to *numediart* has grown from four to ten and our research areas from three to six. And then of course the researchers who have stayed with us throughout this adventure are now *senior* researchers. They

hold technical management posts for each of our research areas and contribute directly to the growth of the Institution.

What links does the Institution have with the sociocultural artists and entrepreneurs in the Mons region (TechnoCTé, Virtualis, Transcultures, le manège.mons,...)?

When the *numediart* Institution was formally launched, we wanted to constitute a consortium of interested parties working in research, culture and the cultural and creative industries. Today the initial fifteen members have grown to twenty-five. The members of this consortium are invited to our termly public presentations as well as to the annual Open Day of the *numediart* Institution. Even if they don't come every time, the contacts that we have made in this way have several times enabled us to further develop our projects. We are also founding members of the Cluster TWIST¹⁷ and an active member of the digital forum for Mons2015¹⁸.

Links to industry occurred quite naturally: for the last fifteen years the Wallonia region has systematically linked its tenders for research projects to regional firms. More recently, the desire to federate local strength in the creative economy has led to such initiatives as Creative Wallonia (I'm referring in particular to programs such as Creative People, Boost'Up or Nest'Up). Several living labs are being prepared around particular themes, and there is talk today of creative *hubs* in the major Walloon towns. We are obviously involved in all these changes.

Are there projects that have gone beyond the specific framework of numediart?

Several projects that we led as part of our three-month sessions have resulted in longer-term financing in liaison with Walloon companies. I'm thinking for example about our project using the *phase vocoder for sound alteration* which caught the attention of a firm in Liège and led to two public/private partnerships. This meant that the researchers involved could continue their research for a further five years. Recently we proposed and obtained approval for three industrial research projects co-financed by one firm and the Wallonia Region. Our *CAPTURE* project, one of many, is based on motion capture and follows collaboration with *Belle Productions* and *Tapage Nocturne*¹⁹. In fact in 2009 we worked on the production of video capsules to project the mascot of the cartoon character Mamemo. The

¹⁵ // If possible outside UMONS; we have worked with the Theatre Royal in Mons, at the Wiels, at IMAL, at the University of Gent, with Transcultures, at the Mundaneum, with ARTS2, at the MIC, etc.

¹⁶ // Joint venture with *numediart*, *humanorg* at UMONS, TechnoCTé and IDEA

¹⁷ // A Cluster of Walloon companies specialising in visual, sound and textual technologies

¹⁸ // This groups non high-street digital artists in the Mons region

challenge was to use *motion capture* in order to accelerate the editing process. We managed to create, with the help of the *NeuroTV* Company, an initial cartoon virtually in real time, which was enough to convince the TV station *France3 Corse*. We also have two spin-offs that are being prepared, based on two of the three initial themes chosen by *numediart*. The first will commercialise instruments for enhanced music. The second will offer clients an analysis service for web pages based on a model of visual alertness. This is a good example of the by-products of our activities: an arts/science/technological problem leads to specific applications in related fields (in this case, marketing on websites)

What will be the major projects for *numediart* in the years to come?

Our biggest project is the *DigiSTORM* program. In addition, we have launched or are participating in several European projects such as *ILHAIRE*²⁰, a *Future and Emerging Technologies* project exploring the analysis and synthesis of laughter. We are also part of the *iTREASURES*²¹ project, which aims to contribute to the safeguarding of immaterial heritage. Lastly, we are part of the consortium for the *EU LinkedTV*²² project, whose aim is to prepare the transformation of the web and TV into a gigantic hypermedia environment. We are in charge of the *Media Arts* scenario.

19 // The authors of MAMEMO – mamemo.com

20 // ilhaire.eu

21 // i-treasures.eu

22 // linkedtv.eu

23 // Rue de Houdain

24 // The other European Capital of Culture

25 // Including 3D videos and interaction between people's skeletons

26 // blackmoon-productions.com

27 // lemanege.com

28 // transcultures.be

What will be *numediart's* involvement in Mons 2015?

To answer you specifically, the *numediart* (UMONS) Institution and the Mons 2015 foundation have agreed to collaborate on three digital installations. They are based on technologies developed and produced by the Institute, and artists associated with the Mons event will be able to use and readapt them in their work. The *CityLight* project is aiming to create, on the façade of the UMONS²³ building, an area for architectural mapping open to public participation.

The *CityGate* project aims to establish a telepresence channel between Mons and Plzen²⁴ whose audio and video inputs²⁵ will be open for public contributions. The idea is to set up at different points around the capitals public telepresence zones to exchange visual and audio 3D images between groups in different locations. The *Voix des Anges* is an interdisciplinary project jointly run by the *numediart* Institute and *Sciences du langage* of the Université de Mons, Patric Jean of Blackmoon Production²⁶, le manège.mons²⁷ and Transcultures²⁸. The project's main aim is to give different objects and urban areas in Mons a unique and expressive vocal interactivity. Other one-off events will be added to these three primary projects. All of which amounts to a lot of great experiments which are being prepared for this coming year and which we can't wait to experience.

/ M^R CONTI, RECTOR OF UMONS

Today, the *numediart* institute is one of our ten research institutions at UMONS, the only one of its kind in Wallonia. It provides training and research opportunities, as well as validating new activities in the creative industries' sector. It includes a dozen research services, five faculties, over seventy researchers and over twenty PhDs that are being prepared. Lastly, it generates over two million euros in annual turnover, has four active patents and two on-going public/private partnerships. It is logical that this sector be situated at the heart of the Mons University, since the digital economy has been strongly developed here. The *Digital Innovation Valley* unites the local contributors to this theme and it has recently taken an important step forward with the arrival of a *Microsoft Innovation Center* and one of Google's two European *Data Centers*.

/ WE HAVE BEEN FORTUNATE TO BE ABLE TO BUILD A SOLID NETWORK. IT IS WITHOUT DOUBT THE PART THAT REQUIRES THE LONGEST TIME AND IS THE LEAST VISIBLE, BUT IT IS NONETHELESS THE MOST ESSENTIAL. /