excited atoms

an exploration of virtual mobility in the contemporary performing arts

Judith Staines

with Ghislaine Boddington

April 2010

on the move
THE PERFORMING ARTS TRAVELLER'S TOOLKIT

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acknowledgements

The title *excited atoms* comes from an article in The Guardian, 2008 by UK poet Simon Armitage:
About two years ago I was having a dark Wednesday of the soul in a small town in southern Poland. It was late, wet, cold. I pulled out my phone, pushed one button, and in a couple of seconds I was talking to my wife. We were thousands of miles apart and connected by nothing other than excited atoms.

Judith Staines is a freelance writer, researcher and project manager based in the UK. She is European Editor of the Asia-Europe cultural portal www.culture360.org. From 2004-2009 she was General Editor/Executive Director of www.on-the-move.org. She undertakes a wide range of research and project management in the fields of European cultural cooperation and international mobility. She has collaborated with many European cultural networks and platforms, contributed to EU studies on culture, mobility and networks and written several books for visual artists and cultural managers.

OTM mobility dossier published 2010 by: www.on-the-move.org

foreword_1

It is with immense pleasure that Rob and I can write the forewords to this long-awaited publication. Like any good travel book, it shares its tale of adventure and discovery with the readers, aiming to inspire them to either visit the territory themselves or - at least - to continue to explore it through their own further investigations. As Judith Staines relates, we went looking for *this* (can virtual mobility simply be a means for mobile artists to reduce carbon emissions?) but we found *that* (it's an artistic sector, milieu, practice, means and passion unto itself). Along the way, she unfolds for us the what's, why's and who's of this world, while showing respect for its artist-inhabitants and piquing our curiosity with their words and works.

Despite - or perhaps to reinforce - Don Foresta's observation that artists and the arts in general have been slow to embrace and engage with new technologies, we know that artists have historically *pushed* emerging technologies to develop in ways that the technicians who created them would not have done - the evolution of paint and photography give clear examples. Now, artists as well as arts organisations should be encouraged and supported to continue to do so.

To quote Marshall McLuhan in *Understanding Media* (1964), "The serious artist is the only person able to encounter technology with impunity, just because he is an expert aware of the changes in sense perception".

Let us launch this new publication with the aim that it will give more visibility to those who are already working in this field and will tempt those who are not yet to let their curiosity and creativity lead them there.

Mary Ann DeVlieg

April 2010

foreword_2

"Well, the good old days, may not return" (Tom Petty)

Collaboration is difficult. In a recent NED Karachi workshop **Smart Design Making Data, making sense through 'smart' and 'sustainable' design**[1], Usman Haque used the Prisoners Dilemma to show that voting selfishly always gives you more gain. It is only when you can start to consider making points or making meaning for the group as a whole that you can actually see to your small sacrifice in collaborating creates benefit for the group as a whole and consequently for you. But this takes trust in the people in your immediate neighbourhood. Once that is established however, there is nothing the group as such cannot tackle.

This is not such a disinterested exercise as it may seem. At the launch of the Council thinktank on the Internet of Things[2] in Brussels in December 2009, one of the workshops focused on the premise that vertical institutions will break under the weight of the internet-based decision-making possibilities of ever-growing groups of people organising themselves on all kinds of specific topics. How can we help existing institutions and power nodes to transform into a networked form of a variety of heterogeneous forms of organisation that need mediation? Following the logic of a dark but plausible scenario focusing on breakdown rather than continuity, the issue is to bypass the possibility of this scenario by facilitating citizens with the individual and community tools that are necessary to perform the functions of current institutions and democratic processes: slow down, mediate, negotiate, educate, take a long term perspective…

Again, we may say ☺, again in the arts, in the performing arts where people devote their lives fully and with passion to gaining agency at the lowest level of visibility, not for economic profit, gain and status, but for the sheer joy of the inevitable and love for the moment. Again, we find the tools to help us confront the technological changes that have been set by the axiomatic changes that we have brought about ourselves by aligning and surrounding ourselves with contexts of comfort, not hard times. Best you take them for a change.

Rob van Kranenburg

April 2010

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[1] **DRC WORKSHOP #01 22 – 27 March, 2010, DAP-NEDUET, Karachi**
Smart Design making data, making sense through 'smart' and 'sustainable' design
Conducted by, Rob van Kranenburg (Council of The Internet of Things, Bricolabs) **Usman Haque** (Haque Design + Research Ltd., Pachube) **Fariha Amjad Ubaid** from Karachi (Assoc. Prof., DAP-NEDUET)
[2] http://robvankranenburgs.wordpress.com/2009/10/17/thinktank-for-the-internet-of-things-council-launches/

vm_introduction

- Six theatre artists from different countries co-create a new production, working exclusively online. Decisions about text, direction, lighting, set, costumes and dramaturgy are made online. Artists meet in person for the first time a few days before the performance.

- An international performance group with four members – who have yet to meet in person – have worked together since 2001. They create live networked performances with proximal (real, present) and online (remote) audiences.

- On a Sunday afternoon, people take their seats in a regional cinema – for a live theatre performance. The production is streamed direct from the capital's national theatre.

- A game played online in a virtual city and on the streets of an actual city. Online Players and Street Players collaborate in a zone of possibility and new encounters, where the unfamiliar flourishes. The game investigates some of the social changes brought about by ubiquitous mobile devices, persistent access to a network and location aware technologies.

- A theatre production is performed in real time across two continents. Live performances in London and Rio de Janeiro, with real time video links from both locations, use the distance between the two cities to create a third, surprisingly intimate, location.

- A ballet company with over 800 artist members who live in many different countries. Auditions take place in a virtual world, as do performances. The dancers need never leave home in order to work. The dancers' age, sex, physical form, behaviour and technical capabilities are a matter of choice, unconstrained by nature or reality.

- Two orchestras – one in Venice and one in Manchester – perform together in a live synchronised concert, enjoyed simultaneously by audiences in both cities.

- A telematic setup (mobile portable equipment enabling real-time interactive connectivity between participants in two or more remote spaces) is located on different floors in a gallery, allowing performers and the public to gesture, communicate, play and dance with each other via tele-presence.

Welcome to the world of virtual mobility!

It is a world where the performers and audience can be in different places – simultaneously or at different times. A world where the performers/writers/artists/designers may never actually meet. Where the director, the theatre and the performers might be in different countries, or may exist only in virtual reality. Where games, virtual stages, mobile devices and other technologies intersect and challenge traditional concepts of who is the performer and who and where the audience is.

questions_motivations

It raises lots of questions. Where is the audience? Is it online or with you in person? How do you know anyone is out there? Are they there to see your performance or to chat online? How do

artists collaborate and build trust in this virtual environment? If this is the performing arts: where is the body? where is the emotion?

And what are the motivations? Is it a creative decision to work like this – if so, what are the benefits? Are there new audiences out there for this type of performing arts? What are the consequences for more traditional performing arts concepts and structures?

What about the environmental impact? Do theatre artists seek to reduce their carbon footprint for international touring – and if so how? Or is it a question of money – does it really cost less to produce and present work online?

definitions

As the *excited atoms* research evolved, so did the definition and understanding of virtual mobility. At the start, in 2007, a simple definition from the elearningeuropa.info portal was:

The use of information and communication technologies (ICT) to obtain the same benefits as one would have with physical mobility but without the need to travel.

By the time of the email interviews in January 2010, the definition was more complex, nuanced and tailored to the contemporary performing arts field. In the **vm_interviews** section, twenty-one artists, cultural project and company managers, critical observers and practitioners in academic fields contributed email interviews on the subject. They were given the following definition of virtual mobility in the contemporary performing arts:

- *the various practices of **interactive networked performance** where performers and audience can be in different physical or virtual places*
- *new networking options in the performing arts (use of virtual tools for international mobility in training delivery, meetings & conferences)*
- *the use of virtual channels in the creative process, enabling co-authoring and co-production of performance work by artists and producers in different geographical locations*

This is a broad definition and the inclusion of virtual tools for international mobility for training, meetings and conferences takes the concept beyond the artistic into management and communications fields already well developed in business and education. Nevertheless, the core areas of exploration for *excited atoms* are the fields of interactivity, networked performance, and use of virtual tools for inter-authorship and co-creation. The invited interviewees responded eloquently and in depth on these themes (see **vm_interviews** for interview texts and biographical details).

methodology

The research began with an online survey available August-October 2009 through On-the-Move to identify which issues most interested artists and culture professionals. The survey was cross-published on various other portals and online networks.

185 people responded: more individuals (65%) than organisations (35%); with a very high proportion involved in dance, interdisciplinary and theatre, as well as other arts disciplines.

It was important to pinpoint the level of technical knowledge out in the field and to tailor the study accordingly. Most (73%) identified a 'medium' level of technical knowledge and various user suggestions led to the decision to include a Glossary in the study.

Since the mapping of this subject would centre on the issues and motivations of practitioners and others, the survey aimed to locate the most important of these and found respondents:

- **VERY INTERESTED** (88%) in **artistic creativity**
- **VERY INTERESTED** (75%) in **intercultural dialogue**
- **VERY INTERESTED** (64%) in **financial issues**
- **VERY INTERESTED** (62%) in **new audiences**
- **VERY INTERESTED** (62%) in **social networking**
- **Equally VERY and QUITE INTERESTED** (44%) in **copyright issues**
- **QUITE INTERESTED** (50%) in **the declining relevance of traditional media**

The full survey analysis is available at: http://www.on-the-move.org/documents/Surveyanalysis.pdf and in the Annex to this study.

The research then developed in 2009/10 through online and offline channels, supported by a knowledgeable and well-connected advisory group, and incorporating in depth email interviews with twenty-one practitioners and critical observers.   Ghislaine Boddington of body>data>space was commissioned to write an essay which traces her personal pathway developing collective collaborations through performance telematics.

vm_mapping the terrain

This section outlines a brief history of virtual mobility (**vm**) in performance, presents some of the main areas of work and traces some of the issues and motivations now pushing, pulling, stretching and constraining artists, cultural producers, promoters and movers to collaborate, share, make, question, present and innovate using virtual mobility. The aim of the study is to help bridge gaps in understanding and knowledge.

The mapping makes extensive reference through quotes from the longer email interviews given by practitioners, cultural managers and critical observers (see **vm_interviews** chapter for full texts and biographical details). Others quoted here are credited with links as appropriate.

excited atoms attempts to speak in plain English and, where possible, to demystify and create pathways for the non-initiated into and through this world. This is why it was decided to create a Glossary to try and explain some of the terms and acronyms in simpler language.   If you come across a word or phrase you don't understand - check the **vm_glossary**.

a brief history_time and space

While some timelines trace the sources of virtual mobility back to the first transatlantic telegraph cable in 1858, several artworks in the 20th century stand out as landmarks.

An early significant moment – the first large-scale collaboration between artists, engineers and scientists - was the 9 Evenings of Theatre and Engineering in New York in 1966. Organised by Robert Rauschenberg and Billy Klüver, 10 New York artists worked with 30 engineers and scientists from the world renowned Bell Telephone Laboratories to create groundbreaking performances that incorporated new technology. They were recorded on film in all their glorious and crazy cacophony.

But however momentous that early art-technology collaboration, it is a 1980 work by Kit Galloway and Sherrie Rabinowitz - Hole-in-Space – which is consistently quoted as the first visionary public experiment in the history of "performance with no geographic boundaries". The artists described it as a 'Public Communication Sculpture'.

In 1980, on a November evening in Los Angeles, pedestrians who walked past the glass windows of the Broadway Department Store noticed something strange - they did not see their reflection. There were other people walking by, just not them. They ended up talking with the alien reflections and realised that they were in two different locations, indeed, on opposite sides of the country: at the Lincoln Center for the Performing Arts in New York City and the Broadway Department Store in Century City in LA.   No signs, sponsor logos, or credits were posted - no explanation at all was offered. Hole-In-Space suddenly severed the distance between both cities and created an outrageous pedestrian intersection. There was the evening of discovery, followed by the evening of intentional word-of-mouth rendezvous, followed by a mass migration of families and trans-continental loved ones, some of whom had not seen each other for over twenty years.

From 1975 to 1977 Kit Galloway and Sherrie Rabinowitz had developed a series of projects under the title "Aesthetic Research in Telecommunications". Among these was the "Satellite Arts Project" that addressed a multitude of telecollaborative arts and virtual space performance issues that had never been genuinely tested or even experienced. The vision and objective of Satellite Arts Project was to

demonstrate, for the first time, that several performing artists, all of whom would be separated by oceans and geography, could appear and perform together in the same live image. Everyone would see themselves all together, standing next to each other, able to talk with each other, and perform together in "A performance space with no geographic boundaries".

Hole-in-Space took these earlier explorations and technological experiments fully into the public domain and was hailed as "a historic event" by The Village Voice.

While the history of art and technology – in particular the distributed and interactive networked performance which is the subject of this study – covers a relatively short period so far, one cannot deny the long shadows and pervasive influence of earlier figures. Contributions to the conceptualisation and presentation of later works are widely attributed to avant-garde artists and cultural luminaries of the 20th century such as Rudolf Laban, Karlheinz Stockhausen, Merce Cunningham, Emile Jaques-Dalcroze and many more. These curious-minded and creative innovators often anticipated and projected technologies long before they were actually invented.

Several timelines created by researchers, online and for exhibitions, as well as other references are quoted in the **histories** section of **vm_explore more** chapter.

research concepts_challenges_discoveries

Since this research into virtual mobility arose from the commitment of On-the-Move to inform and support international mobility in the contemporary performing arts, one starting point was: in a time of environmental anxiety and economic crisis, isn't virtual mobility the obvious solution to physical mobility in the performing arts? Doesn't virtual mobility provide an intelligent alternative to meet growing concerns about the unsustainable financial and environmental costs of international touring, project development and co-productions?

If only it were that simple…

The *excited atoms* research rapidly uncovered a huge body of work and multiple spheres of interconnected networked communities of artists, practitioners and contributors with years of involvement in the ideas, technologies, creativity and practice in this field. As in the OTM survey (described in **vm_introduction**), motivations essentially focus on artistic creativity and communication. Financial and environmental concerns or finding alternatives to physical mobility seem, at first glance, to be less visible.

Another early realisation was that very little of this art work is labelled as or located within the performing arts. Rather, it can be found in fields of new media, visual arts, installation and live art, as well as in interdisciplinary practices such as 'dance-technology' – if it is indeed identified within any specific artistic discipline. This work involves smart, thoughtful, connected, evolved and evolving forms of interdisciplinary and trans-disciplinary practice, the borders of which are constantly shifting. It generates new ways of thinking about audiences, participation and presentation.

The placement of work in unexpected niches seems to be a result of the networked thinking and non-hierarchical connections offered by the web – what cultural strategist Charles Leadbeater calls "the logic of With".

Alongside this has been what is perhaps a conscious turning away from traditional artform categorisation by early adopters who have sought to build their own communities of practice (e.g.

the highly successful [Dance-Tech.net](http://www.dance-tech.net) and others in the **platforms_groups_lists_networks_blogs** section of the **vm_explore more** chapter).

Finding the work for this study was just the start of the challenge. Understanding what people wrote about it and deciphering some of the fuzzy online pictures and videos presented fresh obstacles. Distributed new media art work, telematics, networked performance, kinodance, cybermedia, interactive performances in virtual environments are all extensively documented and critiqued on the web. But it can sometimes be really difficult to understand the language. It is English – but not as we know it! In virtual mobility, practitioners are often breaking new ground which requires rethinking how it is described, adopting language from science and technology, as well as inventing their own terms.   Language has evolved considerably over time from the early pioneers to more recent work with different technologies. It is common to find different words or phrases used in different contexts to mean the same thing. This can be confusing.

There's another issue in understanding the language used to describe virtual mobility in the performing arts: the extensive academic discourse. A huge amount of work and resources in this field can be found within universities (teaching, research, experimentation, development of new tools), especially in North America, the UK and some other European countries. University labs and computer networks have often enabled cutting edge research and creative development – and continue to do so. But sometimes one finds a lot of impenetrable academic jargon surrounding the interfaces of networked performance. It can create a kind of hermetic world. Nevertheless, research papers, books, journal articles and conference publications which seek to explain, critique and place cutting edge, interdisciplinary networked performance practice in historical and contemporary contexts - in a way that is far beyond the scope of this study – are an essential part of the process of gaining recognition for this pioneering work.

A further challenge to the initial premise for the research was that, for arts practitioners engaged in creation in virtual space and through digital networks, there is no geographical space element. Mobility is a term related to geography. Virtual space, by its nature, integrates mobility and implies interconnectedness.   It is not necessarily important whether you connect with someone next door or on the other side of the world – what is central is the connectedness, the communication and the participation. Several interviewees refer to the important concept of translocal - the idea of a 'global village' or networked society - a community that is beyond the local, connected globally through the internet and other social networking platforms.

So the first phase of mapping virtual mobility for *excited atoms* was rather challenging. The material uncovered turned parts of the original research concept upside down. The work and practitioners didn't seem to identify themselves with the performing arts; 'performances' appeared to take place in a hermetic, self-referential world; it was often impossible to understand the descriptions and photo documentation; and the people involved were not interested in mobility as such.

All this only reinforced the need for such a study which could help bridge gaps in understanding and knowledge.

A wider mapping of the field resulted in a broader definition of virtual mobility, as set out in **vm_introduction**. A large number of artists, company and project managers and critical observers were invited to contribute email interviews. It was felt that a more holistic approach to virtual mobility in the performing arts could uncover shared motivations and common issues and this process helped widen the thinking, the content and the connections.

A basic intention of the ***excited atoms*** study was to ask:
- **what** is going on
- **why** are people working this way
- **where** are the hotspots
- **who** are the key players

The study has been conceived of as a bridge. On the one side: making accessible the often complex and sometimes less visible practice and experiences of virtual mobility to a wide community of performing arts practitioners and institutions. On the other side: exploring motivations and issues, such as audience development, participation, environmental issues, in the context of virtual mobility.

The **vm_explore more** chapter locates over 150 important projects, key players and hotspots around the world, as well as a selection of further reading. The commissioned essay by Ghislaine Boddington of body>data>space explores a personal pathway through developing creative collaborations in the field of telematics. The **vm_interviews** chapter explores motivations and issues of twenty-one of these key players. This chapter draws out the main themes and explores them further.

vm_types of work

New technologies facilitate the development and presentation of creative work in the performing arts. Types of work which can be described as incorporating virtual mobility include:

- one-way distributed/streamed media: e.g. worldwide screening of live performances from the Metropolitan Opera, New York and the National Theatre, London (NT Live)

- two-way interactive performance projects where performers (and audiences) are in different physical locations: e.g. The World Opera, The Lost Sounds Orchestra, Another Language Performing Arts Company

- 'three-way' interactive telematic performance involving physical and virtual environments – so called 'mixed reality' (with virtual avatars interacting with real performers) – which leads to a concept of a third internet virtual world space: e.g. Company in Space, Paul Sermon, body>data>space

- interactive performances in virtual environments, especially Second Life™: e.g. Ballet Pixelle, Avatar Body Collision

- performances that use mobile devices (e.g. phones, GPS) and games to create new structures that put the audience participants in the role of performer/co-creator/content generator, often using augmented reality: e.g. Blast Theory, Rimini Protokoll

- using online tools and social networks to invite participation of artists, amateurs, fans as co-creators: e.g. Matthias Fritsch's 'Music From the Masses'(YouTube), A Bicycle built for Two Thousand (using Mechanical Turk), Emma Cotter's Rettocamme choreography project and others which invite scripted or linked dance contributions.

- using standard and specialist online tools (website, blog, joint authoring software, Skype, email) to co-create and develop joint projects: e.g. Long Distance Hotel, FLOSS Manuals BookSprints

- and many more variations existing and yet to be invented of mixed, online, offline, augmented, interactive, pervasive, virtual, realtime, realities and unrealities….

For practitioners, managers and observers, there is a big difference between the one-way and two-way types of virtual mobility. One-way streaming is connected with distribution mechanisms, marketing and audience-building whereas two-way interactivity (whether involving performers, audience or both, remote or proximal) centres on the creative process and participatory strategies. Both can be driven by the desire for mobility and intercultural dialogue – or not.

the online environment

The web invites us to think and act with people, rather than for them, on their behalf or even doing things to them. The web is an invitation to connect with other people with whom we can share, exchange and create new knowledge and ideas through a process of structured lateral, free association of people and ideas. The principle underlying the web is the idea of endless, lateral connection.

<div align="right">

Charles Leadbeater, 2009 essay *The Art of With*:

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The online environment provides a location for this work which offers different structures, modes, behaviours and expectations which artists and cultural professionals use, research and subvert.

Digital technology has spawned new spaces, processes and forms that offer exciting possibilities for creative research and scientific investigation. Through the exploration of these realms, emerge new ways of conceptualizing ourselves: our bodies, the spaces in which we reside and the potential for artistic expression. As artists, architects, cultural theorists and scientists working with new technologies, we come together from diverse disciplines and find ourselves asking similar questions. What is the dialogue between corporeality and the virtual? How do we engage our embodied sense perceptions in virtual worlds? How do we address form, time and space as both apparition and reality, and how are these questions answered through our various and overlapping practices? What can the blurred boundaries between our practices teach us about our identity as individuals and a society in the 21st century?

<div align="right">

http://www.artstechsymposium.utah.edu/overview.html, 2004

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Many of the *excited atoms* interviewees comment on changes in the understanding of the online environment. It is particularly interesting to look at comments from practitioners with a long experience of this work:

People's understanding of the online environment has grown, along with their interest in and acceptance of this way of working. It's really only been in the last year that I have started to feel like most people really do understand what I'm talking about, when I give presentations about my work; and there are a lot more people interested in seeing or making live online performance. However there is still some confusion about the liveness - sites like YouTube mean that people expect to be able to access things whenever they want and to get it into their heads that cyberformance is live, it happens at a specific (and often odd) time, can still be a struggle!

<div align="right">

Helen Varley Jamieson

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In her thesis, Adventures in Cyberformance, Helen Varley Jamieson recalls the outrage among audience members at the Magdalena Project Theatre Festival in Denmark in 2001 when she presented a performance using graphical avatars and an internet chat application for a live

performance linking Denmark and two locations in California. Some audience members declared that this could not be called theatre because there was "no emotion" and "no body". A heated debate raged, focusing on the use of the word "theatre" to describe what they had witnessed. Ghislaine Boddington also recalls the negative reactions of IETM members in Bergen in 1995 to her presentation on new technologies, culture and performing arts. Many early adopters of interactivity were given a hard time by performing arts professionals. Varley Jamieson even refers to "a level of technophobia that was common in theatre communities at that time".

How times have changed. At the point of finalising this study, interactive networked performance finally entered the mainstream in the UK with a blog review by Lyn Gardner in *The Guardian* of the British Council's connected showcase of interactive performance at the Tokyo Performing Arts Market in February 2010. And yet, a heated debate again rages in the comments section on whether this work is actually new, does anyone want to see it, differences between participatory and interactive work, how fantastic/disappointing it is and more. Plus ça change…

Keeping up with what's in and what's out in the online environment is a serious challenge. As Robert McCrum observes "Electronic time can seem faster than real time".

At the point of writing, MySpace has been eclipsed by Facebook, Google shows signs of being on the decline, Twitter continues to surge ahead, Chatroulette (such a promising new environment for imaginative virtual performance) is rapidly being taken over by people seeking sexual thrills. The arts organisations and countries which invested in creating a presence in Second Life™ have now closed down the registration pages and abandoned the virtual institutions (even though dancers and performers continue to find huge creative potential in MUVEs).

The only certainty is that by the time you read this, things will have moved on. And to some extent, this is a European perspective: it might look different when viewed from Asia, Latin America or Africa. Anyone for Orkut, Nico Nico Douga, Baidupedia, Plurk, Xing, Hi5 or Badoo? Keeping up with the game is essential for connectivity and influence.

enlarging the action radius

Virtual mobility enlarges your own action radius. This feels good.

Susanne Berkenheger

Artists and performing arts companies - in fact, anyone and everyone from individuals to commercial companies, education, non-profit sector, activists, proselytisers and governments - use Facebook, YouTube, Twitter and other networking media to communicate and present their work and opinions. The scale of participation which can be reached through these global media is astonishing.

Many *excited atoms* interviewees made powerful statements about their motivation to communicate and connect with others online:

Locally you only have that much connectivity and diversity. The most important thing is to be able to find like minds globally.

Rob van Kranenburg

The greatest benefits and strengths of virtual mobility are of course global access that the internet can provide. It breaks the boundary of locality in physical presence that allows us to achieve collaboration, connectivity and audiences on a global level. Virtual mobility in terms of performance challenges artists to creatively explore its limitations and advantages.

Venzha Christ

I am very interested in researching formats of collaboration between artists who live in different cultural and geographical contexts. My work has always been influenced by the need and the wish to meet artists from "somewhere else". My main aim in the exploring virtual mobility is the possibilities it allows in terms of collaborations with artists, as well as its effects on the "live" presentation. Virtual mobility not only allows a much wider range of collaborations, but it also conditions the type of collaboration. The huge benefit of virtual mobility is then, in my case, the fact that it's a tool for coming into contact and collaborating with almost any artist.

Tiago Rodrigues

A driving motivation is the potential to meet and work with artists world-wide, without the geographical and travel restrictions. Multi-site performances can combine the skills of many different artists in different locations, so that the collaborative result is bigger then the individual participants. …it is incredible to be able to communicate with geographically dispersed artists on a daily basis through videoconference technology. We share and try new artistic ideas, build relationships and in many cases, never physically meet.

Elizabeth & Jimmy Miklavcic

Diversity is a goal and very often an outcome of interactive networked projects. Sometimes it is achieved through the kind of playful randomness in who you connect with:

Multi-location allows more people to participate, and that allows for greater diversity. It also allows unlikely collaborations and conversations in that many of the people we connect with "virtually" are individuals we would never otherwise "meet" or get to know.

Helen Thorington

It's fun! And it's effective, because you don't have to do all the work yourself. And, third, it often triggers interesting debates.

Susanne Berkenheger

Picking up on Marshall McLuhan's concept of "the global village", several interviewees associate their motivation with a desire to connect with the world through their work:

I have always been interested in connecting people in a kind of worldwide workshop independent of space, from a philosophy of world citizenship.

Niels Windfeld Lund

Klaus Nicolai speaks of "the trans-national, global citizen nature of performances for the audience" and associates this work with "a sensate form of world citizenship".

Democratisation and access to information are also important:

I believe the internet is a powerful tool for bringing people together. On a political level, we are currently witnessing an interesting shift in the way information is broadcast. With so many publications tools available, we no longer depend solely on large media outlets, each person can publish and share their own content, in the way they find appropriate. The possibilities for democratisation are increasing.

Nayse Lopez

Nevertheless, some experienced observers critique social network platforms, their collaborative potential and value systems:

If we look at popular social media platforms like Facebook or Twitter, there you have mass participation platforms for virtual immobility.

Tapio Makela

I am not a believer in the cultural or artistic values easily attributed to wikipedia, google or youtube fashions, and weary of the enormous, unbelievable data accumulation (and data mining that now goes on).

Johannes Birringer

Most coming together on the web consists of groups of unassociated people connecting to express their self, more often their ego. Very little collaboration happens and most communication is one-way only.

Don Foresta

Things are changing at the speed of light… But where exactly is it leading us?

Esther Charron, Pôles Magnétiques, Québec ([IETM Bratislava meeting 2009](#)/WG1)

participatory strategies

Digital technology has made radical changes to the whole landscape of contemporary creation, and the performing arts are no exception. As well as opening up other fields of research, formats, different mental and emotional spaces, the virtual environment offers us new, more open and participative ways of relating to artistic objects.

[Sobrenatural3/2009](#), **virtual festival of La Porta, Barcelona**

There has been a distinctive shift in strategy for artists working in the 20th and 21st centuries:

The iconoclastic 20th century avant-garde aimed to make people think about the world in new ways by shocking them out of their established ways of seeing and thinking. The participatory 21st century avant-garde wants to achieve the same aim but through questioning and conversations, that make people acknowledge other vantage points, values, points of view.

Charles Leadbeater

The 'participatory avant-garde artist' now has many new tools for making work, some intended for totally different purposes, for example:

- [Mechanical Turk](#) was created by Amazon as a market place for online workers and is widely used as such. Artists Aaron Koblin and Daniel Massey used it to 'employ' over 2,000 'workers' (each paid $0.06) to contribute sound recordings which they then wove together to make their award-winning online musical composition [A Bicycle Built for Two Thousand](#).
- Matthias Fritsch posts silent music videos on YouTube and invites a response from professionals and amateurs in [Music From the Masses](#).
- Emma Cotter invites dancers to contribute dance pieces following a scripted choreography instruction in [Rettocamme RWP54321](#).
- [Move Out Loud](#) by Filipe Viegas and Brahim Sourney asks contemporary choreographers and dancers to create and upload a video of a solo dance, picking up the last movement of the solo created by the previous artist.

Mobility is frequently articulated as a goal and a benefit for this type of work:

The obvious point is that it is much easier to travel to people and places which are physically far away. This opens a much bigger range of collaborations even over a long time period since it doesn't matter where I am in the real world.

Matthias Fritsch

The result is a chain of movement, a world choreography that crosses frontiers, languages, cultures, religions and socio-economic differences. An endless choreographic sentence that, in a fraction of a second, takes u to another body, another space, another temperature, another world.

[Move Out Loud](#)

My main interests in networked performance are the possibilities of connecting with remote places (he! I am based in Brisbane, Australia!), of the audience to be active and generating content, the processes of making and scripting an online performance

<div align="right">

[Suzon Fuks](#), Diving the Frame

</div>

The internet is more than a source of information: it is a meeting point, which is very important for far removed places with not much money.

<div align="right">

Isabel Ferreira, Rio de Janeiro, www.south-south.info ([IETM Bratislava meeting 2009](#)/WG1)

</div>

My geographical location in New Zealand has definitely been a factor - the physical isolation means that online networks and ways of working are very attractive

<div align="right">

Helen Varley Jamieson

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One of the dominant processes of online creativity is the breakdown of differentiation between amateur and professional artists (witness YouTube et al.). The involvement of amateurs is visible in many award-winning new media artworks. Many artists use the strategy of enlisting participation and co-creating work with unknown collaborators through crowdsourcing. Mashing up existing data found on the web (sounds, images etc.) is another strategy. Amateur – professional: this is not the concern of artists using social networking channels and online resources; what matters is the communication and participation:

When I first announced the project I actually received the most enthusiastic response from non-dancers in my community.

<div align="right">

Emma Cotter

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Many young companies now have online blogs where they post videos of the rehearsal process daily, and invite online viewers to share feedback and recommendations as the piece develops. At the IETM 2009 meeting in Bratislava, Portuguese choreographer, [Joao Costa](#) claims that this avenue of communication is invaluable because you not only receive helpful feedback from a worldwide network of artists and audiences, but that it is also an easy way to reach people who would never have had access to the work.

Gnab Collective in Finland used live streaming for the first time in 2010 for a work in progress performance. One performer took part via Skype and along with the live, local audience an online audience viewed the performance via [two video streams](#). Director Martina Marti comments: "This was the first time ever we streamed so there's still a lot to improve but it's a GREAT addition to the show and we had 16 permanent online viewers!"

need for face-to-face

The best tool ever invented for improving communication is the table. Online tools aren't better than face-to-face contact, they're just better than nothing.[3]

<div align="right">

[Clay Shirky](#)**, author of *Here Comes Everybody***

</div>

While eloquent about the potential of the web for participation, reaching more collaborators, unexpected connections, contributors were quick to assert the need for face-to-face meetings. It is interesting to note that arguments made back in the mid-1990s for better support for European cultural networks – stating that face-to-face meetings were an essential part of international cultural

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[3] [Online Information Conference 2008](#)

collaboration – have not changed. Communications tools have proliferated and offer powerful means of online collaboration and yet the human need to meet and talk persists.

In terms of real work and real change on the ground one needs to look the other in the eye to know if it is good to work with someone. From that moment on things like skype are unbelievably helpful.

<div align="right">Rob van Kranenburg</div>

I feel one needs to know the other person on a deeper level to make significant performances together (as you would in a music group – you need to rehearse).

<div align="right">Johannes Birringer</div>

Online tools present an opportunity to initiate exchange. However they are not in themselves sufficient to develop deeper bonds and meaningful collaborations. I believe there is no substitute for face-to-face interactions among youth to develop initial relationships and working projects, which can then be sustained better online with some regular meetings during the year.

<div align="right">Nitin Sawhney: interview for EMYAN (euro-med young artists' network)</div>

I always prefer to meet people face to face. It's probably the only way of contact I really feel comfortable with. In all the other connections - even telephone calls – so much information about the other is missing, there is so much room for misunderstanding

<div align="right">Susanne Berkenheger</div>

For communication, learning and sharing skills or tools virtual mobility is very effective. However, for more sustainable relations, to use Miwon Kwon's term, on-site dialogue and work over a longer period of a time is necessary.

<div align="right">Tapio Makela</div>

Similar arguments are found in the business world. A 2009 airline magazine article *Why meetings matter more than ever* examined how commercial companies are changing their travel habits in order to reduce costs. It quoted two studies into the value of conducting business face-to-face. A Harvard Business Review Analytic Services survey of over 2000 business people worldwide found that face-to-face meetings were seen as the most effective method for conducting business with key stakeholders, compared with videoconference, teleconferences and webinars. A European survey conducted by Hilton Hotels for British Airways found that 81% believe that face-to-face meetings improve productivity and results while 60% state that over-reliance on technology can lead to miscommunication. 90% of German and French respondents say that crucial business relationships are impossible without meeting in person. Of course, one must allow for the fact that an airline and a hotel chain, as well as many international business people, have a particular interest in international travel and the business it generates.

Face-to-face – or vis-à-vis as it is now commonly called in business environments - remains essential for good communication and trust in business, education and cultural spheres, particularly where intercultural dialogue is involved.

People are still adjusting to digital forms of communication, without the body language & intonation that convey so much - I still have & hear about disastrous miscommunications, but I think this is getting less.

<div align="right">Helen Varley Jamieson</div>

The hybrid mix of virtual and physical event creation, for conferences, gatherings and education as well as for performance and business, will become 'the way to do stuff' in the next decade. It is accepted by many who work with this hybridity regularly that the mix of realtime vis-à-vis meetings and realtime online connectivity creates healthy, organic and naturally porous knowledge exchange.

<div align="right">Ghislaine Boddington</div>

Another phenomenon, clearly on the rise in cultural, non-profit and activist fields, is new participatory methods for face-to-face meetings which echo web-based strategies. There is an exceptionally strong interest in the Berlin IETM plenary meeting in 2010 - the first IETM to offer an open agenda to be determined on the spot by participants. In new media, arts and other fields BarCamps and meetings using Open Space Technology, which offer self-organising strategies aiming to address complexity and diversity, are popular ways of managing content and participation.

creative potential

Most respondents (88%) to the OTM Survey on Virtual Mobility (see **annex**) were motivated to get involved in virtual mobility for reasons of artistic creativity. Many interviewees for *excited atoms* had interesting perspectives on both the potential and the limitations.

Tapio Makela explores 'limited social sites' - environments which put people into close proximity in order to accelerate networking, dialogue and new thinking:

Remote or closed, limited social sites are in my mind necessary to create a level of intimacy and dialogue to transgress our practices and thinking.

Transgression and access to closed, even illegal, spaces expands the physical action radius. Virtual mobility opens new routes for sharing and 'authorising' transgressive practices. The impact on artist and audience in terms of interaction and complicity are interesting and in early stages of research.

Julianne Pierce describes projects by Blast Theory:

Works such as 'Rider Spoke' (2007) and 'Uncle Roy All Around You' (2003) use the real city to invite new roles for the audience. 'Uncle Roy All Around You' prompted transgressive actions by players as they were asked to explore the offices and back streets of the city while 'Rider Spoke' embeds personal recordings made by the audience into it and gives the audience licence to find any path through them. These projects have posed important questions about the meaning of interaction and, especially, its limitations. Who is invited to speak, under what conditions and what that is truly meaningful can be said?

Venzha Christ of the House of Natural Fiber (HONF) has explored new illicit spaces for creativity:

The interest in virtual mobility began with HONF artistic exploration into untouched or prohibited areas where the general public is excluded in terms of access and creativity: for example, a performance inside an illegal space. The performance took place inside an Intensive Care Unit (ICU) room of a hospital in Yogyakarta. Due to the illegal artistic concept, the performance could only be seen by the audience through its documentation while, at the venue, collaborators was kept hidden for their safety.

Telematics and networked interactive performance have grown out of body-centred artistic practices (dance and theatre). The volume of work in telematic dance and live art presents fascinating observations on the development of new sensitivities by practitioners. Working with the absent presence of the performer or audience/participant in virtual space offers creative potential and challenges:

Telematic experience is about connection. Although based on virtual processes, I still think that, peculiarly enough, it is about physical connection. The need we have to see and hear someone is a physical need, we cannot touch this person in a direct way, but we are still trying to engage in a physical connection.
Sophia Lycouris (from 'Virtual Physical Bodies – Serious Play' by Ghislaine Boddington published in Die Welt als virtuelles Environment/The World as a Virtual Environment)

Certainly a new type of post physical experience of our fellow human beings has crept up on us. It doesn't necessarily invalidate the real time real space communing but it is of a different quality and intensity. It has different conventions and a different quality of intimacy – perhaps a more disposable kind? We are also learning a radically different kind of integrity in our relationships.
Shobana Jeyasingh (from 'Virtual Physical Bodies – Serious Play' by Ghislaine Boddington published in Die Welt als virtuelles Environment/The World as a Virtual Environment)

I think there is added value in:
   a)   *the opportunity to interact in a sensate way with other human beings/artists across long distances using your whole body sensitively*
   b)   *the inter-disciplinary co-operation and research across long distances*
   c)   *the development of new ways of perception (perception of oneself and the world around)*
   d)   *the extension of performing arts (contact improvisation, real-time composition, bodyspace-relations) in regards of physical presence and re-presence*
   e)   *the trans-national, global citizen nature of performances for the audience*
   f)   *the extension of the "world stage"; making it a site of encounter outside of hermetical and classical stages.*

Klaus Nicolai

Telematics allows us to work in large groups, with interauthored methodologies, to link with other groups globally and to really work those networks. We use telematic connectivity to explore the potentials and opportunities inherent in extended full body communications at a distance. We are fascinated by the potentials of tele-presence, virtual touch and tele-intuition and by the identity politics that come to the forefront instantly when you are face to face with someone in a different culture in a virtual realm.
Ghislaine Boddington (from 'Virtual Physical Bodies – Serious Play' published in Die Welt als virtuelles Environment/The World as a Virtual Environment)

New tools can offer new approaches to artistic practice:

The [Blast Theory] artists remain fascinated with how technology, especially mobile devices, creates new cultural spaces in which the work is customised and personalised for each participant and what the implications of this shift might be for artistic practice.

Julianne Pierce

My specific interest began four years ago when I found that I could create perfect professional dancers who could work beyond body and joint limits and gravity as well as have unusual capabilities. My key experience was when I was able to transform a young woman into an old woman as she turned in space.

Inarra Saarinen

We are capable of creating virtual hyper-environments, where performance artists as well as visitors at various places in the world can immerse simultaneously. This provides the opportunity of direct contact almost in the sense of "contact improvisation".

Klaus Nicolai

Some choose to explore and anticipate the impact of pervasive media, the so-called 'Internet of Things'. Sean Dodson's Foreword to Rob van Kranenburg's report on the subject foresees two different scenarios for our future cities:

The City of Control: a place where the deployment of radio frequency identification tags (RFID) have become not just commonplace but ubiquitous. Objects, spaces and, yes, even people are tagged and given a unique number, just like web addresses are today.
The City of Trust: here the citizens have been given much more control. Here pervasive systems have been embedded, but offered as an option rather than as a default.

As these types of technologies evolve and pervade public spaces, largely driven by commerce and security, artists, theatre companies and media labs are finding new ways of using them. Ways that

expose the ambient technology and develop alternative strategies for participation and creativity. In March 2010, [Theatre Sandbox](#) in Bristol, UK offered six commissions grants for theatre artists, companies and collectives to support the research and development of experimental pieces of performance which engage with Pervasive Media Technologies.

challenges

The very 'newness' of such work often creates problems in realising artistic concepts since the training and experience of artists fails in some areas to keep pace with the technology.

It is hard to find a composer, who can grasp the nature of a virtual sound-space-composition that is only being realised by moved bodies in a sensed mode and non-linear dimension. A similar statement could be made about picture and video artists.

Klaus Nicolai

Many technical and communication challenges still exist:

I learnt, over the years, to appreciate the daunting effort involved in the logistics of co-production / organisation, across many time zones. Sometimes, with partners in Australia and Japan, this turned out to be not easy. Language and aesthetic differences also need to be approached and differences in platforms, access, and network speed.

Johannes Birringer

World Opera is about bringing the world together. Both the audience and the artists get to experience the opera together with other people who live far away. This is not an easy thing to realise. On the contrary, what we are doing borders on the impossible. The challenges are artistic, technical and cultural. A successful production requires good relationships between the artists. Modern technologies are employed to serve the needs of cultural production.

Niels Windfeld Lund

Interviewee Don Foresta maintains that artists have not been involved early enough with media tools to have a decisive impact on how they are used:

If you look at the history of the media throughout the 20th century, you realise that in every new invention in communication the artist came to it 20 years later. Artists always came to the media tool a generation too late to have any kind of impact on how that tool was integrated into society. It was already well established with either a political or a commercial agenda and what the artists were doing with the same tools had almost no impact on how that tool was used or understood socially.

Practitioners with a longer experience of performance work online remember the early days when time lags of up to seven seconds (as used to happen with long distance phone calls) were common and a big challenge for performers and audience.   Now barely any time lag is experienced.

The most extreme [experience] was our live web cast from Bangalore [to London] which was magical. I had to 'dress' my dancer in Bangalore via my mobile on screen. When she kept insisting that she had taken off her waistcoat, when I could plainly see that she still had it on, it was spooky! Then of course the 7 seconds lapse kicked in and it all became clear! We could see that it was night-time in India and hear the cars screeching in the background while we were sipping our afternoon tea. The collision of geographical realities was astounding and also the feeling that we had triumphed over geography in some way.
[Shobana Jeyasingh](#) (from 'Virtual Physical Bodies – Serious Play' by Ghislaine Boddington published in [Die Welt als virtuelles Environment/The World as a Virtual Environment](#))

And putting oneself into virtual space can create other demands and reactions:

After each networked performance I feel the very strong wish to do something very, very solitary. Because I find virtual networking emotionally quite consuming.

<div align="right">Susanne Berkenheger</div>

interdisciplinary_transdisciplinary

Many artists and companies working in this area do not identify with 'traditional' artform disciplines. This is increasingly the case across all arts disciplines and responsive funding programmes and policy reflect the contemporary artistic reality.

In some countries and regions, falling between designated funding areas can mean that such work is not eligible for subsidy and more traditional forms are favoured. However, it may also present opportunities and can mean that artists and companies have enormous flexibility in how and where they present and position themselves, enabling them to reach multiple audiences, enjoy acclaim in different fields and be strategic in how they engage with policy and debate. Defying conventional artform categories can lead to greater visibility and an enlarged action radius.

For example, the UK-based Blast Theory's work is presented as interactive theatre in the British Council's *connected* showcase in the Tokyo Performing Arts Market, is exhibited in world contemporary art museums, art fairs and biennales; it has won a major new media award (Prix Ars Electronica), a US game developer award (Maverick Award) and been nominated for four national BAFTA theatre awards. The company performs on traditional stages and in the streets (and spaces in between); Blast Theory artists receive regular invitations to collaborate with television and radio; have curated a video programme at Tate Modern; take the lead in science-art research projects; and contribute to academic publications and teaching.

Transdisciplinarity is a recurrent theme, describing how virtual mobility work can benefit from opportunities to collaborate with other non-arts disciplines:

We are exploring types of learning and body perception therapy in interactive virtual environments. Today we know: virtual environments are comparable to completely new instruments. They can be used for the exploration, testing and learning of new body languages, the interrelationship of movements and mental connections. It is a place where highly complex and trans-disciplinary relationships between art, technology (body) perception, psychology and trans-local identity as well as physical presence and re-presence come about.

<div align="right">Klaus Nicolai</div>

In some countries, university media research labs and arts-science programmes have provided opportunities for transdisciplinary collaboration. One of the biggest use of telematics worldwide is in medicine, for realtime skills transfer of top global experts in complex surgical operations, and the use of virtual environments in medical training is now compulsory (you train on the virtual body before you are allowed to do it on the real body!!). In many cases the interactive performing arts can benefit from research and development already done in other fields.

participation and audiences

There is a growing awareness of the one-way form of virtual mobility: streaming live performance to remote venues, mostly cinemas, where an audience in another place, town, country or continent

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can experience the performance. The Metropolitan Opera, New York has years of experience and a very sophisticated programme, now streaming live performance into community and education settings with a large schools programme, as well as reaching arts audiences around the world. In Stockholm, the Konserthuset has run a programme streaming concerts direct to old people's homes, reaching audiences not physically able to come to the concert hall.

The National Theatre in London ran a pilot programme in 2009, now extended to more venues and productions. Some interesting research was conducted by NESTA during the pilot phase into the experiences of audiences and the Beyond Live report presents several unexpected results. For example: despite lower expectations, cinema audiences (the live theatre performances were streamed to selected UK cinemas) reported higher levels of emotional engagement with the production than those who had actually attended the performance at the National Theatre.

The audience issues for artists and companies engaged in two-way interactive networked performance are more complex. For a start, it can be difficult to know whether there is indeed any audience out there – sensing and generating 'absent presence' is a fascinating concept, totally different from the experience of theatre and dance performers who work on real life stages:

As a theatre practitioner, one of the most interesting things for me about my cyberformance practice has been the idea of absent presence - how a performer can generate presence when they are physically absent, or when their audience is all remote, sitting at a computer somewhere else in the world. This is one of the biggest differences between cyberformance & theatre, and something I'm still exploring. I believe there is a definite connection between remote performers, & likewise a connection between the performers & the audience, that is different to the connection you have in a physical theatre space & yet is somehow still very strong, due to the focussed attention of everyone.

Helen Varley Jamieson

One of the challenges I feel that traditional (sic!) networked performances where audiences are still and performers are connected do not work for the audience. The performers are inspired because their experience of performing is altered, but the audiences are in conventional positions, unable to read the networkedness of the act. So more imagination is often needed to how audiences are moved.

Tapio Makela

Tapio Makela is not the only practitioner to question the quality and impact of the experience of networked performance for audiences.

As a performing artist I am interested in the way the "virtual" can interfere with the "live" factor of performance. The constitution of an assembly in a performance venue is something I am profoundly interested in. So, of course, when "virtual mobility" becomes an issue, I must say I face a contradiction or, at least, some dangers. "Virtual" is still associated with "individual". Our "virtual" actions are, mainly, attempts at being "physically" alone while connecting virtually to other people in the same condition. In that sense, I am attracted to it as a working tool, but not so much as a presentation tool.

Tiago Rodrigues

This work is time consuming and not always as satisfying as work on the ground for real audiences (internet participating audiences or players are not easy to prepare or integrate when you work with compositional aesthetics coming from dance, theatre, music or film). I am beginning to pay attention to slow time and careful development of ideas, over time, and the work on real performance and scenography, as well as the development of audiences and of interactive technologies used in live performance.

Johannes Birringer

So called "interactive theatre" has gained mainstream attention in more and more countries. As this report was finalised, a Theatre Forum Ireland blog questioned some basic notions of interactivity: "Is the interactive theatre currently in vogue just for the culturally confident minority? Isn't theatre

intrinsically interactive?   Theatre cannot take place without the interaction between the artists and the audience."

The quality of the technical infrastructure can also affect the audience's experience:

Although we have built an audience base here in Salt Lake City, it has been a challenge to develop audiences at participating sites. Many of the performance spaces are not designed for performance, and many of the traditional performance spaces are not designed with a technology and network infrastructure. It has been a challenge to develop a distributed audience.

<div align="right">Elizabeth & Jimmy Miklavcic</div>

Overall, the challenge for audience development in the performing arts is the familiar one of remaining relevant to emerging generations:

If we fail to embrace the opportunities offered by these new technologies – especially those that enable our audiences to tailor their own experiences and to develop creativity collaboratively – then the arts increasingly won't be seen as relevant by a large proportion of the population that has grown up digital.

<div align="right">Mark Ball, Shift Happens</div>

environmental issues

As described above, one of the starting points for the **excited atoms** research was to see whether virtual mobility is used as an alternative to physical mobility out of environmental concerns, in order to reduce the carbon footprint of international cultural collaboration and performing arts touring. There is little evidence of this yet from this study, although it may well become more prevalent since many in the cultural field are thinking about these issues, developing environmental policies for their organisations and weighing costs and benefits.

Several projects work specifically on these issues. Julie's Bicycle is a UK company helping the music industry cut its greenhouse gas emissions and create a low carbon creative future.   The 'Touring Research' project in 2010 assesses the greenhouse gas impacts of Bands, Orchestras and Theatres touring the UK and internationally. Another report looks at the carbon impact of music downloads.

The 2020 Network & Thin Ice project brings together six European arts organisations. A pilot project in 2008-2010, included a colloquium on the carbon footprint of the performing arts at the Kaaitheater in Brussels. A larger networked EU-funded project Imagine 2020 Network develops further ideas and events beyond 2010.

Slow Boat/Two Degrees was run by ArtsAdmin and the British Council in London in 2009 on the theme: 'Finding an Environmentally Responsible Future for International Touring' and explored:
-   *Making:* how do we design, direct and devise our work for touring and how could we change that? Looking at movement-free making: residencies; collaborations; sourcing artists and performers locally; design and technology tools including internet, skype etc. as well as new lighting technology.
-   *Moving:* why do we tour our work in the way we do and how can we reduce its environmental impact? Examining forms of transport; planning geographic continuity back into touring; sourcing sets abroad; working more with overseas technicians.
-   *Presenting:* how can venues work together in their programming? What can visiting companies ask venues to do in order to reduce the audience's carbon footprint?
An interview with Judith Knight discussed the thinking behind the event.

Festivals are becoming increasingly environmentally conscious and sharing experience through networks: see 50 practical tips for sustainable events.

But as artists and arts organisations embrace environmental issues and implement new policies, some familiar challenges remain. The organiser of an arts and education project in the UK commented that the financial cost of setting up online interactive links to participating schools around the country was higher than flying two children first class from each location to the conference.   Many providers of mobility grants and funding for international cultural projects have yet to take on environmental issues in terms of offering grants which include, where required, the additional financial and time costs for travel by train or other low carbon options. The cost-benefit analysis for some forms of virtual mobility can indeed be complex.

money_access

Several comments and issues arose related to funding, access to technologies and the choice (often ideological and values-driven) to engage with open source free technologies or high end tools (usually only accessible to business and through some university research environments).

Helen Varley Jamieson highlights hidden costs, including the built-in obsolescence of technology which acts as a barrier to participation in many ways:

There are a lot of hidden costs that people don't always count when comparing - the over-obsolescence of computer technology is something that really annoys me & it should be addressed when comparing different forms of mobility. Also the cost of infrastructure - there are still people out there on dial-up.

Other interviewees saw positive benefits for those on lower budgets:

Virtual mobility is both a practical answer to the limited budgets artistic projects sometimes face as well as a subject of artistic research on itself. Both aspects walk side by side, once there is always a great interest in exploring further whatever tools artists might use today to overcome production limitations they have to face.

Tiago Rodrigues

People and institutions that are geographically distant but have similar goals and ideas can greatly benefit from virtual mobility, especially in terms of money. With so many tools available, the collaboration between people in different parts of the world became a lot easier.

Nayse Lopez

Several interviewees stressed the need for research and development funding, as well as the imperative for artists to gain access to high end tools and to be more influential in the development of new technologies:

There is an enormous need for artistic research with challengingly high technical and other standards. Only a few of the institutions who have taken part in the project thus far can meet these requirements and have the necessary funds in order to work on the exploration of this new form of trans-local physical body presence with its media (audio and visual) nature.

Klaus Nicolai

Funding to support the artistic and technological research in a more creative approach to information technology is critical. Granting organizations must step up to include the investigative process as well as the final outcome.

Elizabeth & Jimmy Miklavcic

Institutions today, particularly those involved in art, education and culture, cannot ignore the network. It is becoming more and more the dominant technological manifestation of our society's communication space where those efforts will increasingly take place and be transmitted and exchanged. Not being present in it will make their efforts incrementally irrelevant just as those cities which declined and were bypassed by the railroad saw their importance subside. For those institutions to remain effective a strong network presence and operation is crucial, meaning that time, effort and resources must be directed to it. The network dimension must be integrated into their programmes and their members made aware of the necessity to operate within it.

Don Foresta

Wider access to technologies and funding for R&D is called for and there is a need to build on success stories in such collaborations between artists and university research labs and networks:

Through an ongoing collaboration with Mixed Reality Lab (University of Nottingham), Blast Theory aims to integrate emerging technologies with an artistic vision that places the audience at the heart of the work - so that participants contribute directly to their experience of the work. The group's collaboration with the University of Nottingham has grown and deepened over ten years and, to our knowledge, is the longest and most productive partnership between a university and a group of artists anywhere in the world.

Julianne Pierce

what else?

Many more issues, questions and motivations presented themselves through the **excited atoms** research and the interviewees contributions. On the agenda for further exploration in relation to virtual mobility in performing arts are:
- Archiving
- Copyright and Intellectual Property Rights
- Plagiarism
- Crediting of interauthorship
- Commercialisation and commodification

Web 2.0 tools facilitate interaction, sharing and collaboration – so how do you untangle content ownership? And does it still matter?

Mandy Garner, The Guardian

some conclusions

Giving the voice to some of the **excited atoms** contributors:

FUTURE = NOW :)   Venzha Christ

I don't think we can seriously consider the future of any single field or artistic discipline, when hybrid forms already exist and merging and mutating are in process all around us. Whatever the arenas for participation in the performing arts may be, they will be temporary as merging and mutating continue, and we come to understand that the strength and vitality of our future lies in creative practice not just in traditional "art" forms, but in many forms.

Helen Thorington

Networked virtual environments are not the extension of the theatre and the classic forms of performance using different means, but represent their removal and an opening up towards new trans-disciplinary and trans-local co-productions for the production of "world stages" geared towards real world citizens.

Klaus Nicolai

I am sceptical that virtual mobility has (so far) opened my eyes to stronger artistic work or expression. I think the physical interaction is primary, in all senses and in all ways of working, and online collaboration can only be contributory.

Johannes Birringer

I struggle on how to use and explore "virtual mobility" and still keep and deepen the "spirit of assembly" that continues to be one of the main reasons for me to engage with the performing arts.

Tiago Rodrigues

Our new programme Robots and Avatars explores how young people will work and play with new representational forms of themselves and others in virtual and physical life in the next 10-15 years. It examines multi-identity evolutions of today's younger generations within the context of a world in which virtual and physical spaces are increasingly blended. This is where the years of action research with telematics has taken us. It's clear that the future world of work will involve collective collaborations in teams mixing live presence, tele-presence, avatars in virtual worlds and robots, all co-creating together.

Ghislaine Boddington

The time and community that I currently exist in is comprised of many virtual relationships and I think it is important to incorporate these tools in experimental ways to move ideas forward. Virtual mobility has great potential for breaking language, cultural, gender and age barriers.

Emma Cotter

Mapping the territory of virtual mobility in the contemporary performing has located many different ways in which new technologies facilitate the development and presentation of creative work. It is a fast-moving environment, ranging from one-way distribution systems which expand the scope for viewing work to more interactive complex spaces where new senses, intuitions and relationships are engaged and extended.

Games, virtual worlds and social networks generate new habits and expectations of connectivity across all generations. Artists are expanding their action radius through participatory strategies using social media. Others are exploring connectivity within cities and on other physical and virtual stages through pervasive media and augmented reality.

This is a fluid world where technology creates possibilities which artists seize and sometimes subvert – and where creative responses can generate unexpected lateral spin-offs.

Watch this space!

This essay was commissioned as part of the *excited atoms* research into virtual mobility. Author Ghislaine Boddington was invited to chart her personal pathway through the field, exploring creative collaborations through telematics with shinkansen, Butterfly Effect Network, European Choreographic Forum, IETM, ResCen, body>data>space and more. An exciting journey which starts in 1969 with man's first steps on the moon…

Collective Collaborations through Telematics

GHISLAINE BODDINGTON – Creative Director, body>data>space

Today **communication connectivity for work and social use** between humans is enhanced through speedy data flow, enabling live video transmission between people at a distance, even from within one's own home.

The opportunity to transmit as well as receive video data has been taken up en masse in social networking through the use of webcams and chat room-style video feeds. Video conferencing for business, live satellite uplinks for TV/entertainment industry, mobile phone live feeds and the evolution of real time meet ups in virtual worlds see many millions worldwide in instant connection. The use of online two way video streams for educational, professional development and medicinal purposes is extending by the day. Consequently the use of hybrid virtual /physical events are emerging in many sectors to supplement or even replace the physical gathering or conference event.

Telematics – a full bodied, online, gestural interface, extends our physical world, utilising the virtual to connect the local to the local, enabling a diverse range of opportunities. It can be used:
- as a tool for intercultural understanding, knowledge exchange, skills bartering and trust building

- as a shared creative environment for community/public use through public realm interventions and crowdsourcing
- as an excellent way to build quality debate and common understandings, through pre-event and post-event knowledge transfer
- to evolve expression of self and others in co-creation processes
- to re-examine identity and 'live' presence, expanding the senses and tele-intuition
- as a positive shift towards active (rather than passive) interaction, in opposition to the health/computer cautions i.e. for physical gaming, allowing a free flow of body movement no longer restricted by wires
- as a positive, user led interaction with cameras (in opposition to the questioned ethics of surveillance cameras)
- as instant real-time connectivity in our fullest form allowing us the right, as humans, to receive and transmit data representing ones full body (and that of others with agreed permission)
- as a distance bridger, dissolving boundaries, enabling less use of flights and a cleaner eco-footprint

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My personal pathway through performance telematics

1969
'21st July 1969: Man takes first steps on the Moon - American Neil Armstrong has become the first man to walk on the Moon. The astronaut stepped onto the Moon's surface, in the Sea of Tranquility, at 0256 GMT, nearly 20 minutes after first opening the hatch on the Eagle landing craft. As he put his left foot down first Armstrong declared: "That's one small step for man, one giant leap for mankind." The historic moments were captured on television cameras installed on the Eagle and turned on by Armstrong. He was joined by colleague Edwin "Buzz" Aldrin at 0315 GMT and the two collected data and performed various exercises- including jumping across the landscape - before planting the Stars and Stripes flag at 0341 GMT ' Extract from BBC Online - On this Day

My sister and I must have watched this first moon landing a hundred times on television, my father insistent every repeat, calling up the stairs or down the garden, that we viewed it again and again, that we must not miss or ever forget this historical moment! It was a very special event. I was six, open minded, wide eyed and fascinated by the fact we could see this 'really now' all the way from the moon, and amazed by the fact that so many people all around the world were watching it at the same time. We felt we belonged to the wider human race and this was the first consciousness that I had of an action that affected all beings.

My father Stuart (1904-1981) lived through many transformations in the technologies around him in his lifetime. He made me deeply aware of the speed of change and the advantages to the human condition that medicinal, communication, travel and recording technologies were making. He was fascinated by **the shift in understanding of time and distance across the 20th century.**

I was born to this technology-obsessed father and to a science fiction excited mother, both artistic, both well travelled, both speaking fluent French, both with a global "network" of friends/colleagues. It is clear, looking back, that their joint influences have set my pathways in life. Dr Who was a must every weekend, hot sticky road trips around Europe to stay with our friends 'on the continent' was a summer holiday regular, science museum exhibitions featured as often as possible. Visitors from all over the world came to hang out at our home, artist friends of my mother, backpacker friends of my big sister, the house and garden were filled with multiple languages and diverse cultures all getting on together, communal style.

1985

My first fulltime job, project co-ordinator at Chisenhale Dance Space in East London, the UK home of new dance and contact improvisation. Here the space was run by a collective, which had international links. One of my first tasks was to make a mailing list including UK, USA, Dutch, Finnish and German names and addresses. There was a buzzy flow of teachers and practioners between Chisenhale Dance Space and other new dance studios in Amsterdam, Berlin, Helsinki, Alice Springs, New York and Vermont. Steve Paxton, Lisa Nelson, Juleyn Hamilton, Mary Prestidge, to name just a few of the dance and music improvisers, came and went, joining up for on-the-spot creation evenings - 'contact jams'.

I learnt the essentiality of watching one another closely in real time improvised performance. I acknowledged deep in my being that there had to be a chain link, a constant connection, through my eyes and ears, my feel and my touch, to the other bodies around me. To know when to come in, when to leave the stage, **how to navigate the open space between bodies, when to contact**. The expert improvisers stood out from the messiness with their ability to GIVE space to others. This embodied experience proved hugely significant when, a decade later, I began to explore virtual / physical connected space.

I enjoyed that mailing list, I did not get to visit many of the other places at this time, but the sense of connection was imperative. There was a **local-to-local transference of embodied knowledge** happening through the bodies of those teachers and choreographers as they moved from workshop to performance, bringing with them artists from all over the world.

Here also I made my first Japanese friends, audience members who, having chosen to be in London for one or two years to learn English, always found their way to the edgy stuff in town. Ayako and Chie shifted my understanding of distance - they truly came from so far away, they were so different, the world they shared with me was unique - meals, music, style – it felt like another planet. When they left back to Japan they sobbed, saying they knew for sure they would never see me again. It was 1986 and to be honest few friends or colleagues had visited Japan, but I felt determined to engage further in their world.

I have been in Japan many times now, had numerous Japanese artists involved in our projects and we co-created telematic performances between London and Kyoto in 2001.

1988

I had a year out to travel (one of my first stops was Japan) and one opportunity occurred which shifted my head into a far more open space, then and forever. I had the chance to attend Arts Councils of Australia Conference held in Alice Springs, and here I heard two lectures. The first was an expert input on Change Management – a concept in early stages of discussion at the time. The second was a presentation about the use of venue / company networks in Canada and the (pre-internet thus printed) information they had put together to pass between each other - stage plans, technical lists, company requirements - to help venues and companies to knowledge share prior to touring the large distances across Canada.

The third head shifter was the realisation that ideas, gestures and ways of being move and merge throughout the world in a constant time flow, one affecting another without anyone consciously knowing it. I watched a new dance piece by Australian choreographer Jilba Wallace in the middle of this desert town, using tiny gestures of the hands onto the face, strangely similar and eerily related to a short piece "Baby baby baby" that we had presented a few months before at Chisenhale Dance Space by a then young group called the Chomondeleys. My understanding of the Butterfly Effect was born and it has fascinated me ever since

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1989

shinkansen – sound and movement research came into being, co-founded by myself, Cris Cheek and Debbi Lander.

"Very early on we took the view that digital technologies needed to be used as a development by and for people, and we did not, in contrast to many live performance specialists, see it as a dehumanising, oppressive anti-presence to be avoided at all costs, and only the preserve of a select group of techno-wizards. Technical expertise was essential, but it needed to be demystified and shared as openly as possible.

We had a strong sense that these new digital technologies should enable human endeavor and be used to empower us. Enhanced connectivity would facilitate knowledge exchange and therefore deepen understanding between us and those at a distance. Human connectivity must balance technology; so shinkansen set off on a route into the digital world that insisted on the consistent input of human presence into the evolutions of new technologies, based in a concern for the living emotional breathing human body." Extract from the shinkansen Collection essay British Library Archive 2006

Through working with Val Bourne at Dance Umbrella and Bonnie Bird at the Laban Centre I attended the platforms and premieres at the European dance festivals. Montpellier, Bagnolet, Valencia were amongst my first trips, meeting wonderful artists and producers. My networking nature came into its own – I felt opened up and challenged by the cultural differences, fascinated by the cultural similarities and I rapidly extended my brand new database. It felt clear to me that independent artists and producers based in the UK needed to find many more ways and means to link up and collaborate closely with our colleagues all over Europe.

1990

shinkansen connected to the **Informal European Theatre Meeting (IETM)**. The first meeting we attended was in Lisbon, through the invitation of Gil Mendo, where we were introduced to various colleagues with whom we discovered we had similar concerns about professional development.

"All were concerned with advocating and supporting process. This viewpoint went against the grain of the times and the constant focus on product in most artistic exchange projects involving European artists. Butterfly Effect Network saw the need for artists to have a safe space to play, experiment and exchange without the pressure to produce or present product to an audience. A peer to peer exchange………." Extract from the shinkansen Collection essay British Library Archive 2006

1991

The **Butterfly Effect Network (BEN)** was born at the Geneva IETM meeting with member organisations from Austria, Belgium, Portugal, Slovenia and the UK. Forum Danca, Plesni Theater Ljubljana, shinkansen, Stuc / Klapstuk, and Vienna Acts / dieTheater Wein were the five producing groups involved in the network. Other organisations supported artists to join the projects from Wales, Ireland, Romania and France.

Our first discussions were about how to work jointly into creation processes and workshops – and distance was our problem. Time and travel cost money, we were all smaller organisations and independent units, how could we afford to be away from home to be able to work for weeks together on new productions? We discussed many ways to try and work at a distance – setting up rehearsal studios with telephone links, rapid mailing of video tapes from studio to studio, faxing 'end

of day' notes and plans between studios, creating game playing rules for all to use the same day wherever we were. Nowadays this all seems rather silly – but then we were proud of our fax machines and video cameras, and we were still a few years off being able to make our first website.

Unfortunately the "Beam me up Scottie !! " dream of our youth had not emerged from science and to truly exchange and create performances with each another we still had only one choice…..to get on a plane or a train and to meet physically.

1992
The first of five peer to peer group process laboratories took place. Co-produced by the Butterfly Effect Network producers, **European Choreographic Forum** at Dartington International Summer School, Devon hosted sound and movement artists and producers in a two week, annual summer gathering. We had the good fortune of being at a venue that had numerous dance studios, built in the midst of wonderful nature and, most lucky of all, we had access to the burgeoning performance technology unit linked to the College.

Every summer we returned to a growing stack of new technologies, triggers and sensors, videos, mini-discs, theremins, computerised lighting boards, softwares. We projected into fog and water, set up what we called fake telematics between studios using bnc cabling and video cameras, created interconnected theremins, projected the body onto the body in numerous ways. The ideas emerging were fluid and highly creative. Butterfly Effect Network and its participants advanced rapidly into creating what are now known as body reactive immersion environments. The experiments with navigation and orientation, with the use of the body in projected space were all a lead up to later online processes.

Contrary to the dance world stereotypes of this time, the level of articulation was also excellent - identity and gender issues, mobility of young professionals in the EU and, most importantly, creation processes. It was Butterfly Effect Network that set the impetus for an honest recognition of group ownership, and this network initiated and created the Group Process Brief, which, after small changes until 1996, is still used by many today. The acknowledgement of interauthorship evolved as a natural response to the creation processes emerging from the inherent influences of the digital technologies.

Group Process Brief – a few key excerpts
• all participants will be creatives
• skills specialisation will be practised within collective working methodologies
• respect of experience + respect of topicality/freshness are given equal weighting
• all will learn and teach equally
• pooling of ideas
• continuous weaving / plaiting of content development, performance and technology
• chains of interaction between participants - deep collaboration

European Choreographic Forums – Dartington International Summer School 1992-96

The resulting connections between artists and producers in the Butterfly Effect Network led to some

wonderful playfulness with identity and digital technologies – both the tools and the concepts. Choreographers Bert Van Gorp and Sean Tuan John linked up to make 'Fredericks First Kiss', Wayne McGregor extended his early solo 'Cyborg' for the Dance Umbrella Festival, Alain Platel bought along Koen Augustijnen to investigate joint ideas. Liz Aggiss, Daniel Ashwanden, Hans van den Broeck, Mateja Bucar, Francisco Camacho, Christine De Smedt, Mark Jeffery, Barnaby ORorke, Vera Mantero, Kaffe Matthews, Ben Ponton, Silvia Real, Nuno Rebelo, Marie Gabrielle Roti, Ezequiel Santos, Athina Vahia, Fiona Wright and many others excelled at European Choreographic Forum and onwards. Myself and other artists/researchers/producers Mark Deputter, Simon Kirby, Debbi Lander, Gil Mendo, Christian Pronay, Richard Schweitzer, Miran Sustersic and Steve Teers attended regularly, carrying the flow forward, co-creating residencies for promising collaborations beyond the Forum and evolving the network onwards.

Looking back we all **enabled each other to shift territories**. The exchanges and the resulting co-productions made us re-conceive ourselves and realise that we were the mobile professional Europeans we were visioning and discussing, that we were able to work with new processes and that traditional theatre methods were altering day by day, alongside these digital technologies we had increasing access to. Our **sense of identity as connected beings** in a global environment grew as a strong trust network developed within Butterfly Effect. It lasted for six years and a good few of the network members are still regularly in touch and working onwards together, exchanging interns, co-producing projects. Amazingly, out of around 100 members, the majority are still working in the performing arts/culture sector.

In the last few years through body>data>space we have had a massive renewed interest in the group / interauthorship process and many professionals from diverse sectors eagerly engage in this co-ownership process having downloaded it from the site.

1994
Butterfly Effect was one of the first artist led networks in Europe. The European dimension and network component of the project enabled EC Kaleidoscope (now the Culture Programme 2007-2013) funding to be gained for the annual workshop (1993) and EC DGV Task Force Funding for the network (1994). The network was featured as a European case study in the EC DGV funded ADLE II project on serial employment in the cultural sector.

shinkansen evolved this networked group process into a series of other projects including a sound art gathering called the **Sound Works Exchange,** supported by the Goethe Institut and British Council across five years. We began using telematics between night club rooms in a project called **Club Research**, using VJs, DJs and sound artists. Made up of multiple spaces, club environments were perfect for jigsawing together multiple fragments of live music, dance and video. Each night 60 plus people would gather and make it happen, all interacting and linking as they went along. These nights went international into Essen, Helsinki and Paris.

1995
First website made at European Choreographic Forum 4 by Andrew Ward (shinkansen) – a series of text based pages giving a daily report on the workshop. After this we used e-groups to pre-engage all workshop participants, creating a hybrid process of virtual / physical / virtual connectivity that we have extended and evolve onwards up into the present day. Nowadays some workshop attendees are only online, others only physical, others join in both ways.


1995

I was invited to give the **final reflection for the IETM Open Forum in Bergen on new technologies, culture and performing arts.** Now a seemingly obvious keynote, then, amongst the European theatre and dance scene, it was the **"fear of the loss of live presence"** that was at the heart of the debate about digital technologies.

A range of colleagues, younger and older, thoroughly and severely rejected everything I said and several senior IETM colleagues ended up having to defend me. One Dutch colleague introduced me to another saying " Ghislaine here who did the reflection today, she is an excellent dance expert you know, a bit caught up in all this trendy technology stuff at the moment, but she'll get over it! " I remember this moment, keenly at the time (I was bewildered, I wanted to shout "NO I WILL NOT GET OVER IT!!!"). I recall it fondly today.

At the same time many colleagues loved the keynote and immediately invited shinkansen to deliver workshops, lectures and residencies. Our next five years was secured with work with forward thinking festival directors. We were invited to run workshops/debates/conferences on dance, new technologies and telematics in Hamburg (Woven Bodies Woven Cultures for ISTF International Summer Theatre Festival), Berlin (korper.technik//body.technology for Theater der Welt), Essen (Cross Fair: Navigating New Constellations for Tanzlandschaft Ruhr), Munich (Sound Works Exchange for the Goethe Institut) and Lisbon(Corpus Online for Clube Portugues de Artes e Ideias and Forum Danca) amongst others.

1996

The last **European Choreographic Forum 5** took place. By now the network had integrated movement artists with specialists in sound, vision, documentation and multi media. Across the five workshops themes had included: live presence, new technology and nature, the virtual pool, live versus virtual, the social potential of the artist, sampling, multi media and interactivity, sense enhancement, cyborgs and cyberspace, memory, morphing, virtual reality, online performance, future viewing and devising methods.
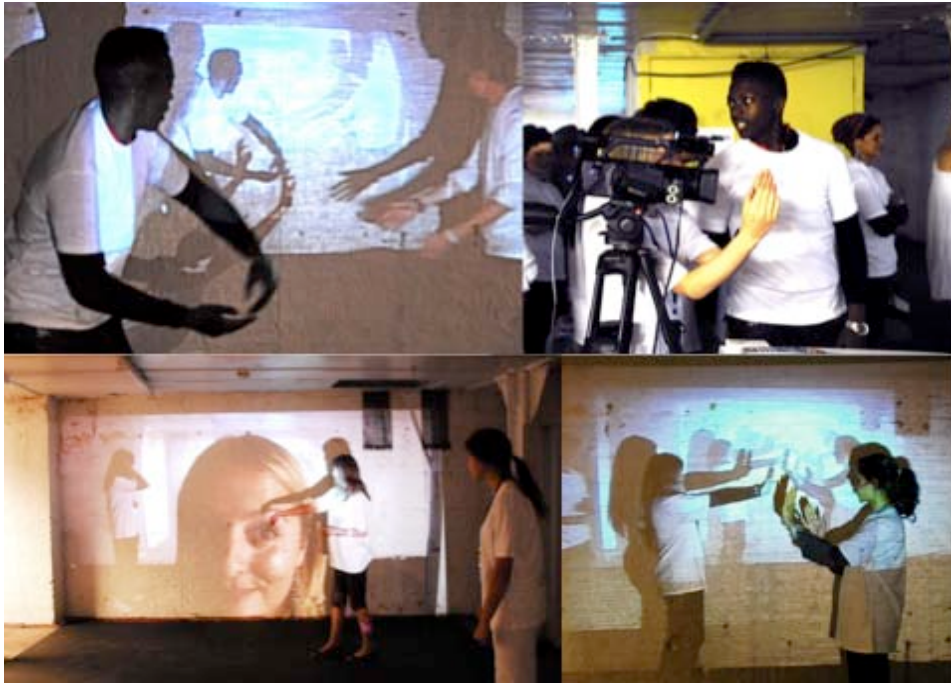
*NESTA Ignite Talent Matters telematics workshop - young people and tele-presence skills development –
London 2009*

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shinkansen started a professional development initiative **Connectivity** and the **Connectivity Online Forum** - a physical / virtual network linking diverse ideas, processes, people and products in a particular community. In this case the community was dance and digital artists. In collaboration with the pioneering media and independent server lounge, backspace in Clink Street, London Bridge we set up monthly debates with guest speakers on a variety of topics, many involving debate around tele-presence. The online element kept people in touch between the meet ups. The flow between giving and receiving from each source or node on the network generated multiple links for the benefit of each individual in professional development, employment and audience development. This was our first virtual /physical event series.

IETM/Gulliver Satellite Meeting in Sofia was convened called "Shall we take over?" to enable a space for debate about young cultural professionals needs in the east of Europe. A summary list that emerged from the working group on New Technologies led by Butterfly Effect members included:

- All arts workers must have a commitment to respond to and cultivate change
- Re-thinking and re-engineering of the body in space is essential
- The arts must seek to satisfy the deeper need (user) for interaction, participation and play
- Extending boundaries of creative control beyond the individual
- Redefining meaning of word artist and authorship
- Structural developments that access high tech resources for the arts

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1999
I was awarded an **Artist Research Associateship at ResCen** (Centre for Creation Processes in the Performing Arts, Middlesex University) specifically to support my work into interauthorship and

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telematics. The first output was to deliver **Virtual Physical Bodies symposium and workshop** (in collaboration with Random Dance Company) to exploring the creation of cyber dancers to work with us in our dance productions. Dance technology experts Thecla Schiphorst (Canada) and Yacov Sharir (US) presented their work. Topics covered included participators and spectators in new media arts, consciousness, telematics/presence, methodologies of making, co-authorship and multi skilling.

Following this symposium and workshop we had the opportunity to create a range of larger scale projects – workshops, commissions, curations – all involving telematics research in some way. It was ResCen support of this research that enabled, from 1999 to 2005, the funding of 15 projects comprehensively exploring telematics and the interauthorship process.

I have written about the integration of these processes as part of my research outputs for ResCen. The section on the ResCen web site is called the Weave and shows how the practice of group processes in the Butterfly Effect Network evolved into the collective collaboration practices at the base of our telematics work today. (The Weave - Virtual presence - physical beings – from telegraph to telecast – a reflection on virtual beingness)

Interauthorship is defined by shinkansen / body>data>space as a collaboration methodology where each individual involved in the process makes a creative contribution as an equal member of a group and shares ownership (in terms of Intellectual property rights and copyright) of the final product with all other creators.

Our growing confidence from our increased experience, and the extensive debates we had been involved in within the networks, led us to understand that the evolution of digital technologies had initiated a series of changes which had fundamentally altered, and would continue to alter, the ways in which art is made and received, as well as radically altering the relationships between the makers and the audience.

2000 – 2001
Two key telematic workshops took place – I co-directed **Cellbytes00** in Arizona State University and **CellBytes01** at Middlesex University and each has its own website. On the ResCen site we have uploaded all the tiny CellBytes experiments as a video archive of research outputs. The experimental CellBytes emerged, as multi-sourced, multi-sited 1-7 minute pieces of live dual stage performance transmitted real time through the internet. The CellBytes exist on the web realtime as a third viewing space and also beyond the life of the research project, as archival evidence of the live performance, with resonance of human presence in the moving images.

Initial research questions for the CellBytes workshops included:
• How do projected forms of the body, that are recreated and transmitted through digital tools, change our relationship with others and ourselves?
• Can embodiment be extended into virtual realms whilst still maintaining a physically centered orientation?
• What connections can be made between the extended bodily sensations virtuality promises, and the body knowledge of the movement researcher?
• Can one inhabit multiple worlds through multiple identities?
• Is there an essence of "presence"?
• What evolutions of touch and intimacy, empathy and trust, are possible with communication through telepresence?

At this time many artists and researchers exploring telematics were talking from the point of view of a **dis-embodied experience** – for us the magic of the connection bypassing distance, the potentials

of virtual touch, the extensions we could see into future worlds of work and play meant we saw it as the opposite - **a hyper-embodied experience.**

2000
Many more artists and organisations were using digital tools as a stage connectors and audience enhancers and we co-created **"Virtual Incarnations",** a series of events as part of the Dance Umbrella Festival, which we co-curation with the Dance Umbrella team and the ICA (2000-2002). This brought some telematic work and body technology performances and installations into the public eye. We held debates with Merce Cunningham on his use of technologies and chance theory, we presented work by Riverbed, Thecla Schiphorst, Frederic Flamand, Company in Space and Kondition Pluriel amongst others.

Digi – ID Akademie/ British Council   *Numero Festival – workshop Lisbon 2006*
- Connecting Flights workshop London 2005

2002
shinkansen ran **Future Physical** between 2001-04 - a large scale programme of commissions and debates putting the body at the centre of digital interaction. At the launch event of the Future Physical programme we did our first three way live link up performance of dancers and sound artists between the ICA in London, Colchester Arts Centre and Norwich Arts Centre.

Future Physical also used live web casting to engage with its international community and network its debates throughout the UK. 800-1200 people worldwide watched each of the keynote speeches and panels throughout Future Physical, gaining the artist speakers a much wider reach, a virtual as well as a physical reception.

2004
In 2004-06 we archived shinkansen after 15 years of work on sound and movement research. All the extensive documentation from the telematic projects mentioned above is available at the **British Library** on request and details are online in the **shinkansen Collection**.

2005 onwards
body>data>space was formed in 2005 to continue the weave of the human body into the digital

domain. **Its co-founders included myself and Leanne Bird from the dance technology sector and Armand Terruli – an architect and video artist.** It is today an interdisciplinary design collective, based in East London, involving 12 specialists from performance, architecture, new media and virtual worlds. We work with interauthorship, connectivity and network creation. We blend the virtual / physical in all our events, installations, performances, education work and debates. Our themed programmes aim at skills exchange and knowledge transfer between culture, creative industries, education, architecture and the digital sector.

© Jean-Paul Berthoin

*Post Me_New ID "DARE WE DO IT REALTIME?" Premiere Kinetica Art Fair London Feb **2009** – EU Culture 2007-13 project with CIANT Progue, Kibla Maribor and CynetART/TMA Dresden. "In a topical world of blurred personal and public space and simultaneous local/global habitats lies the intricate place of virtual/physical orientation. The performers mimic chosen identities – morphing between avatar, cyborg, humanoid, robot, using the electronic, the bionic, the digitronic. Hyper-existence is all around them. In the interconnected, multi-nodal space of real and virtual, they need to be sharply connected and speedily responsive to "the others" – tele-intuition is learnt on the move."*

Our work has telematics at the core of its being. The pathway is complete for me as the aims of my younger visions are finally fulfillable. Fast data transfer enables us to future vision 2020 now. It is from our telematic base that our **Virtual Physical Bodies exhibition** in CDA in Paris emerged – installations of 'skintouchfeel' collective content, Tele-pods, Second Life installations and Ideasphere 3D data balls were created by the collective. Our recent EU project **Post Me_New ID** looked at identity and mobility of young Europeans in 2008-09 - ten years on from Butterfly Effect Network the scenario is very different with physical and data transfer a natural part of many young professionals' lives. Our architectural work involves telematic projects into media facades and urban screens, designs for mobile **Digi-meeting stations** as future connected venues, telematic waterfalls transmitted onto tower blocks.

It is from this that our new programme **Robots and Avatars** is evolving. This project explores how young people will work and play with new representational forms of themselves and others in virtual and physical life in the next 10-15 years. It examines multi-identity evolutions of today's younger generations within the context of a world in which virtual and physical spaces are increasingly

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blended. This is where the years of action research have taken us.

Our partner NESTA (National Endowment for Science, Technology and the Arts) advances the educational viewpoint, we simultaneously explore it within society at large. We focus on telematics, robotics and avatar creation with young people today aiming to learn from them more about the **skills required for the future workplace**. As always we have many questions to be answered.

- What potential challenges does the education sector face in preparing young people with the right creative skills and attitudes for their future work environments?
- With new representational forms in virtual and physical life – robots and avatars – likely to be a part of everyday working life, what will the working day for future generations entail?
- What is the emerging psychology underlying robot / avatar creation within today's younger generations? What are the implications of this for how they learn?
- How do our robot and avatar creations reflect on ourselves and our identity? What can they teach us about ourselves?

Onwards we go - 3G/4G, GPS, locative medias, mobile technologies, wireless interactivity, holograms, 3D projection systems and expanding virtual worlds all hint at the next forms of representation of oneself and others. Multi-identity is part of today's world, and a mix of vis-à-vis engagement and tele-presence is an ongoing part of the world of work and play. Collective collaborations onwards will involve teams mixing live presence, tele-presence, avatars in virtual worlds and robots, all co-creating together.

So what happens when your avatar makes its own avatar, when your robot has a relationship with your avatar? Those are the next questions………………….

Ghislaine Boddington, Creative Director, body>data>space

The shinkansen Collection

Research Associate Artist, ResCen, Middlesex University

Robots and Avatars

Ghislaine Boddington (Creative Director, body>data>space) is an artist, researcher and curator specialising in the integration of performance, body responsive technologies and interactive interfaces. An expert in virtual/physical environments she holds in depth knowledge of the way the human user perceives, participates, moves, communicates and behaves within connected space. In 2005, after fifteen years work as Artistic Director of shinkansen / Future Physical, nearly 400 project documentations were acquisitioned by the British Library creating the shinkansen Collection. Ghislaine now works with body>data>space, a design collective engaged in creating fascinating connections between performance, architecture, new media and virtual worlds. She is known internationally for her long term work on identity politics and intercultural relations, and on her evolution of acknowledged interauthorship and collaborative creation processes. She holds an Artist Research Associateship at ResCen, Middlesex University, which supports her fascination with tele-kinetics, tele-presence and the evolution of tele-intuitive interfaces.

© Ghislaine Boddington / body>data>space 2010

vm_interviews

As part of the **excited atoms** research, significant artists, critical observers, networkers, digital activists and practitioners from around the world were identified and invited to contribute to the study in early 2010 through short email interviews. They were asked the following questions:

1. **In what ways are you involved in virtual mobility/interactive networked performance?**

2. **Why do you choose to work in this way?**

3. **Can you trace when your interest in virtual mobility started and how it has changed over time?**

4. **What do you think are the benefits and strengths of virtual mobility compared to real time physical mobility?**

5. **How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?**

The aim was to look at the key drivers now pushing and pulling artists, cultural producers, promoters and movers to collaborate, share, make, present and innovate using virtual mobility. Through the voices of important thinkers, networkers and practitioners in the field, the research wanted to trace the history, map current practice and reflect on the future.

Interviewees were offered a broad definition of virtual mobility:

- *the various practices of **interactive networked performance** where performers and audience can be in different physical or virtual places*
- *new networking options in the performing arts (use of virtual tools for international mobility in training delivery, meetings & conferences)*
- *the use of virtual channels in the creative process, enabling co-authoring and co-production of performance work by artists and producers in different geographical locations*

This section contains the edited interviews and is organised in four groups:

- Practitioners: perspectives rooted in artistic practice
  - Helen Varley Jamieson
  - Susanne Berkenheger
  - Matthias Fritsch
  - Isabel Valverde
  - Emma Cotter
  - radical_hope

- Projects & companies: organising virtual mobility
  - Tiago Rodrigues: Long Distance Hotel
  - Julianne Pierce: Blast Theory
  - Niels Windfeld Lund: The World Opera
  - Venzha Christ: House of Natural Fiber
  - Inarra Saarinen: Ballet Pixelle
  - Elizabeth & Jimmy Miklavcic: Another Language

- Critical observers: the long view
    - Rob van Kranenburg
    - Klaus Nicolai
    - Helen Thorington
    - Don Foresta
    - Tapio Mäkelä
    - Johannes Birringer

- Information and online tools: practical and environmental aspects
    - Nayse Lopez
    - Guy Guypens
    - Jan Ritsema

Many interviewees present several perspectives. They have been grouped according to the main thematic focus of their interview to help guide the reader through this rich and varied content.

Practitioners: perspectives rooted in artistic practice

Helen Varley Jamieson theatre writer, cyberformer, nomad, catalyst, collaborator

How are you involved in virtual mobility/interactive networked performance?
Much of my current artistic practice is what I call cyberformance - live online performance that uses internet technologies to bring remote performers together in real time, for online and/or proximal audiences. I've been doing this since around 1999/2000 when I got involved with desktop theater and then established my own practice, formed the group Avatar Body /Collision/ with Vicki Smith, Karla Ptacek and Leena Saarinen; and this group initiated the purpose-built cyberformance platform UpStage. Since 2003 I've been UpStage project manager which occupies around half my life. UpStage has a growing user community - distributed around the world - as well as being a platform for collaborative networked performance; so I am very actively involved in everything - collaborating and creating work for this platform, but also managing everything from the development of the software to the development of the user community. And it all happens online.

Why do you choose to work in this way?
Initially it wasn't a conscious choice - I saw opportunities & went for them. My geographical location in New Zealand has definitely been a factor - the physical isolation means that online networks and ways of working are very attractive, plus we have a strong culture of innovation here - of adapting what we have to achieve what we want; so it seems natural that I would experiment with online technologies to make theatre. Now I choose to keep working this way because I have so many excellent friends & colleagues scattered around the world that other ways of working are mostly impossible; but I do enjoy to collaborate in physical proximity when I have the opportunity :)

Can you trace when your interest in virtual mobility started and how it has changed over time?
My background is as a theatre practitioner, but it's pretty difficult to earn a living in theatre here in NZ, so in the mid-90s one of my jobs was hand-coding web sites. Before that, I'd encountered the internet through working in libraries and in student politics, but that was early days. It was in the mid-90s when I began to discover that people were using the internet as a creative medium, and even for live performances. I'd seen chat rooms & IRC & some role-playing environments - all text-based - in the early 90s, but wasn't interested in spending time at the keyboard talking to people on the other side of the world who I didn't know. But when I was exploring hypertext and electronic fiction in 1999, I came across Desktop Theater and this was like a door opening into a new

way of being. It wasn't random people having a social chat - it was like-minded artists who were collaborating online to create performances about specific themes & with clear intentions, content-wise as well as in terms of exploring the new medium.

The technology has changed over time - actually not as massively as many might think. More significantly, people's understanding of the online environment has grown, along with their interest in and acceptance of this way of working. It's really only been in the last year that I have started to feel like most people really do understand what I'm talking about, when I give presentations about my work; and there are a lot more people interested in seeing or making live online performance. However there is still some confusion about the liveness - sites like YouTube mean that people expect to be able to access things whenever they want and to get it into their heads that cyberformance is live, it happens at a specific (and often odd) time, can still be a struggle!

In terms of how my interest has changed ... I'm definitely still as interested & excited as I was 10 years ago. It never gets boring because so many things are changing & evolving. Sometimes I feel tired because most of what I do, I don't get paid for and it is a real struggle to keep a project like UpStage alive with no funding or other resources beyond the user community. I've grown more confident with my own skills & abilities and lately I've been enjoying a different role curating the UpStage festivals - not making the work myself, but facilitating other artists' processes. It's quite satisfying to look back on the body of work over the last decade & realise how much we've done.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
Obviously there are practical benefits - for example being based in New Zealand, it's very expensive & time consuming & environmentally unfriendly to travel to festivals & conferences on the other side of the world, whereas participating online is (usually) very easy. However there are a lot of hidden costs that people don't always count when comparing - the over-obsolescence of computer technology is something that really annoys me & it should be addressed when comparing different forms of mobility. Also the cost of infrastructure - there are still people out there on dial-up.

Virtual mobility levels some inequalities at least partially, but then new inequalities emerge. For instance I'm a really fast typist, in English, so when I'm chatting with non English-speaking people I have a huge advantage & have to consciously try not to talk over the top of everyone (but I am basically a mono-linguist so in certain other situations I'm hopelessly lost). People are still adjusting to digital forms of communication, without the body language & intonation that convey so much - I still have & hear about disastrous miscommunications, but I think this is getting less.

As a theatre practitioner, one of the most interesting things for me about my cyberformance practice has been the idea of absent presence - how a performer can generate presence when they are physically absent, or when their audience is all remote, sitting at a computer somewhere else in the world. This is one of the biggest differences between cyberformance & theatre, and something I'm still exploring. I believe there is a definite connection between remote performers, & likewise a connection between the performers & the audience, that is different to the connection you have in a physical theatre space & yet is somehow still very strong, due to the focussed attention of everyone.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
I try to keep my visions of the future as open as possible, so I don't get too fixated on things turning out in a way that they might not, & so that I can respond to new things as they appear. But I do think that audiences will become more au fait with and interested in online/networked performance, and that the performer/audience relationship will continue to evolve in interesting ways.

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Susanne Berkenheger author, journalist, player of chat theatre, digital territory nurse.

How are you involved in virtual mobility/interactive networked performance?
I just finished a community project for the Net Residency of the Literaturhaus Bremen. It's called "The Last Days of Second Life" and was a kind of fictional research expedition through deserted zones in the virtual world. There was an open call for volunteers who wanted to become members of the expedition team. The project was quite often topic of media reports and debate. A Second-Life-forum interpreted the expedition as a cunning PR gag to take Second Life to the media again. Therefore, several activists joined the research team. A handful of counter-demonstrators came to the preventative demo in Second Life against a (possible) shutdown of Second Life. Their reproach: the project endangered their business and threatens jobs.

Before that, I and two other artists, Andy Deck from New York and Hidenori Watanabe from Tokyo, were virtual residents of the New York gallery "Location One". As three complete strangers, Location One asked us to develop a collaborative art project from afar. Topic: The 2008 US Presidential Election. We discussed it in the gallery's virtual residency blog. In the end I took the statements of the other two out of that blog and pinned them on lamp posts, tree-trunks and pipes in Berlin-Mitte, together with an invitation to the public to tell me their opinion by tearing off one of the multiple-choice answer strips. Andy and Hidenori did some other works. So … did we fail? Perhaps - in part. But I find the partly failing collaborations quite often the most inspiring ones.

The open call for the virtual residency by "Location One" reminded me of some chat theatre experiments which I did in earlier times (2000 - 2004). Several times I was part of a group of authors who wrote a theatre play by simply each of us playing a fictional character in a private chat. We didn't know who we were and had no contact outside the chat. In 2004 I logged in to a public chat with a fictional character again in order to create a theatre play. My character was a provocatress who made herself known only within her own rules of speech, who played with snippets of communication as if she were a computer programme. The chatters tried to crack her hermetic shield: they begged and flirted, they implored my character to speak with them in a normal language, they came up with the wildest ideas, they became impatient, they ranted and raved. www.berkenheger.de/berkenheger.pdf

Why do you choose to work in this way?
It's fun! And it's effective, because you don't have to do all the work yourself. And, third, it often triggers interesting debates. But I have to admit one thing: after each networked performance I feel the very strong wish to do something very, very solitary. And normally I follow this wish then. Because I find virtual networking emotionally quite consuming.

Can you trace when your interest in virtual mobility started and how it has changed over time?
Ah, well, first of all, I have to say: I'm not a very good networker in real life. And I'm an even worse networker in virtuality as I always prefer to meet people face to face. It's probably the only way of contact I really feel comfortable with. In all the other connections - even telephone calls – so much information about the other is missing, there is so much room for misunderstanding. But exactly this gap, that missing information, this space for misunderstandings, is also a space for inventing something to fill that gap, and therefore it's a quite inspiring space. So, I won't say that I use virtual mobility - as you call it - I rather use the virtual non-mobility, i.e. the things that don't work in this connection. Well, I think, this has not really changed, but of course I noticed that I have improved my virtual networking ability a little bit.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?

Yes, there are also some benefits: It's cheap, it's fast, it's convenient (you can lie in bed the whole day). And there is one more point: virtual mobility enlarges your own action radius. This feels good.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
Um. Um. Um. Earnestly, I have no idea about that. That's the truth.

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Matthias Fritsch is an artist living and working in Berlin. He studied media art, film & curatorial studies at ZKM in Germany and Bard College/CCS in New York and collaborates with artists, professionals and amateurs worldwide.

How are you involved in virtual mobility/interactive networked performance?
First of all – I don't know if I really can consider my work as part of virtual mobility but there are for sure some aspects of interactivity, network and performance. Over the last years I do some project lines where I make use of bigger and smaller social networks.

The major one is "Music from the Masses" where I collaborate with many other artists on a global base by using the cybersphere and social media. Since 2008, every six months I post a new silent music video via YouTube and invite musicians from all over the world to send me their soundtracks. So far I received more than a hundred really good soundtracks from amateurs and professionals which do reach quite a big audience by joining that project.

Why do you choose to work in this way?
I came across the huge creative potential of web2.0 users by observing the reactions to my video "Kneecam No.1" which became famous under the name of "Technoviking". Over the last years I have built up the "Technoviking Archive" to research the strategies of participatory practice in digital social networks. The new project "Music from the Masses" is a more narrow approach to produce new collaborative works and research the mechanisms and demographics behind.

Can you trace when your interest in virtual mobility started and how it has changed over time?
My interest started in the beginning of this millennium when I got involved in DVD programming and created the interactive narrative film "schwerelos" in which the audience had to make collective decisions by using many laser pointers. Now my focus shifted more to a person to person collaboration within the cybersphere and small personal networks.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
The obvious point is that it is much easier to travel to people and places which are physically far away. This opens a much bigger range of collaborations even over a long time period since it doesn't matter where I am in the real world. But this is something everybody knows and experiences already.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
Since I experience the change of cultures in circles, or let me rather describe it as spirals, I expect the return to the "good old analogue" qualities in the artificial virtuality. The aesthetic and emotional gap between the real and the virtual world will become less obvious and more natural. Also I expect the inclusion of more senses by neural interfaces soon.

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[**Isabel Valverde**](#) performer, interdisciplinary choreographer, researcher from Portugal

How are you involved in virtual mobility/interactive networked performance?
I'm involved with virtual mobility within various interconnected dimensions: creation, collaboration, theorisation, production, education, and network. It is part of a larger body of work within dance-technology, my post-doctoral research subject. I'm engaged in digging the possibilities for interfaces to adapt to our physical embodied ways of interacting with others remotely, creating works that collaboratively invest in modes of physical-virtual embodied interactions amongst subjects and their environments; to understand and benefit from a posthuman corporeal experience, where there is no separation between ourselves and the machine processes we constructed for them.

"The machine is not an it to be animated, worshipped, and dominated. The machine is us, our processes, an aspect of our embodiment. We can be responsible for machines; they do not dominate or threaten us. We are responsible for boundaries; we are they."
Haraway, Donna "[A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century](#)", in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991)

Why do you choose to work in this way?
- *Research* - to better understand and invest in multiple interconnected sensory and perceptive creative intersubjective experiences and communication.
- *MUVE* - to be able to develop works in virtual places where anyone (with an avatar and the application SL®) can go and participate in a collective cross-cultural embodied mediated performance.
- *Posthuman Corporeality* - to work on the possibilities that virtual expansion can offer to physical embodiment. Distancing to come closer.
- *Documentation global reach* - to let people everywhere learn about my work.
- *Network* - to be connected and attend and participate in professional and social networks, with local and remote people and organizations.
- *Motivation* - artists do not only need to adapt to the technologies of their time. They need to question and challenge them to be fateful to live in all its possible interlinked modes dimensions states in continuous mutating nature. Now, more than ever, artists need to also propose new applications and interfaces that point to a change of mentality regarding the body.

Can you trace when your interest in virtual mobility started and how it has changed over time?
I become interested in virtual mobility during my MA in inter arts art SFSU, California. In 1996, I started to use the Internet for communication, documentation/publication, and research. With my focus on dance and performance applying electronics and body imaging, I learned about works where the physical body is video mediated, audiovisually connecting subjects performing in remote locales: Richard Lowenberg (satellite TV), Orlan, Stelarc, (Internet, WWW), Lynn Hershman Leeson (as virtual objects in a shared networked VR space), and early online networked theatre platforms like Desktop Theatre® and Palace®.

During my Ph.D. research in Dance and Technology (1999-2004), and at events such as IDAT/International Dance and Technology conference in Tempe Arizona (1999), I continued learning and researching about different body-tech interfaces, including virtual and networked performance through telematics and within MUVE through artists, like the Company in Space, and Paul Sermon.

Mediated Contact, Artists' Television Access, SF, 2001 // Concept Isabel Valverde // Performance by Stuart Philips and Isabel Valverde // Performance Duet based in structured movement and contact

improvisation through physical and video real-time mediation (performed in two separated spaces)

In Between, UCRiverside and UCLos Angeles, 2003 // Concept Isabel Valverde // In collaboration with Norah Zuniga Shaw (UCLA) // Performance by 2 groups of 5 dancers in Riverside and Los Angeles Double Sited Telematic Performance using internet 2 connection between 2 physical sites, and broadcasted to the Internet.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
Rather than a substitute for physical mobility, virtual mobility expands the physical by the diverse possibilities of digital real time mediation and interactivity/responsivity, and its global reach. It enables new hybrid modes of collaboration, work nature and process, presentation-reception, and principally audience participation. Through an embodied virtual mobility the embodied mode of experiencing and being can be developed in much depth as the main subject of research, stopping its instrumentalisation.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
Through creative/artistic works and formats that really allow all embodied senses, perceptions, movements, and functions to be involved, engaged in multiple interconnected channels, shared through video broadcast, as avatars, or elements of Multi-User Virtual Environments. As avatars, or in dialogue with one, this virtual agent will not only perform but also respond to your movements, immersed in MUVEs, such as Second Life®, fulfilling and enriching your physical embodied experience. As programming languages will become increasingly intuitive and accessible, we will easily program avatars as we wish (a partner, a slaver), towards a deeper and cross-dimensional proximity to and amongst ourselves and the world.

Recommended visionary Collaborative Projects:
IN TOUCH
Pleasure Machine/Blind Date
Touch Terrain
Blob Dance
Real Virtual Games
Weathering In
Bridging the Second Life/Real Life divide

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Emma Cotter choreographer, graphic designer and framer based in New York, co-founder of Rettocamme dance+art+design.

How are you involved in virtual mobility/interactive networked performance?
In 2009, I started a web-based choreography experiment. The RETTOCAMME Web Project: RWP54321 has a very simple premise: I offered a short written description of a dance piece to online arts communities and invited choreographers, animators and videographers to translate the ideas into their own material. Once a piece has been created, the artist simply uploads their video in any manner and adds a specific tag: "RWP54321". I collect the links and post them on the main website.

Why do you choose to work in this way?
I wanted to create a project that utilized online social networks to connect and engage both artists and audience. It is a low budget opportunity for artists to reach a world wide audience and because it is not curated, open to all levels of experience and expressions. For the non-artist spectator, it gives a unique window into the process of decisions and interpretations that are involved in the

development of new material. When I first announced the project I actually received the most enthusiastic response from non-dancers in my community.

Can you trace when your interest in virtual mobility started and how it has changed over time?
I started using email as a choreographic tool around 2005. I was having a hard time scheduling dancers and affording studio space. I would send all the dancers written descriptions of phrases so they could prepare individually, all with slight variations. This was very successful introduced a new texture into the overall work. In the last three years, I have been working with a collaborating composer, Jordan McLean, in a similar manner. As he is frequently on tour as a musician we spend more time using the internet to communicate concepts and build a joint audience.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
I believe that artwork should be immediate and a reflection of the collective conscious. The time and community that I currently exist in is comprised of many virtual relationships and I think it is important to incorporate these tools in experimental ways to move ideas forward. Virtual mobility has great potential for breaking language, cultural, gender and age barriers.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
I would like to see more of a sense of community and less competition in the dance realm.

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radical hope is a personage and character appropriating the social role of the Native Indian Plenty Coups, leader of the Crow Tribe.   For the moment she investigates artistic attitude, act and resonance at AP.T / Antwerp. Her question is how, from a performative point of view, we can infiltrate, open and generate contexts that belong to the social sphere. Instead of looking for problematic 'topics' within our society and artistically exploiting them, she is interested in the invention and the imagineering of performative approaches, - instruments - that bring 'blocked' things into motion.

How are you involved in virtual mobility/interactive networked performance?
By inventing and building tools, not to make profit but to produce change in situations which seem to call for it.

Why do you choose to work in this way?
It's the dancer in me - I guess - that is automatically producing movement. There is less a sense of choice than rather a sense of call. Or maybe a choice to dive into what is calling.

Can you trace when your interest in virtual mobility started and how it has changed over time?
Virtual mobility is the communication with something other than only the one sitting in front of you, the one you can physically touch, isn't it? VM allows the bringing together of very diverse spirits: unforeseeable combinations of spirits that can bring forth real change? I don't know this – I think this when I try to answer the question.
Ref. Darwin: genes that are far from each other happen to 'produce' the most progressive nature(s).

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
I don't want to compare these types of mobility and would say that as long as both don't exclude each other they ARE the two elements that are needed for an actual real mobility.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?

Hopefully in our minds: 'imagineering' is one of the most hopeful activities, involving both imagining and inventing / putting into practice.
www.open-frames.net/projects/viewmaster_the_series & **www.tsee-und-asch.ch**

Projects & companies: organising virtual mobility

Tiago Rodrigues actor | director | writer directs the Portuguese company **Mundo Perfeito** since 2003 and teaches theatre at PARTS contemporary dance school in Brussels.

How are you involved in virtual mobility/interactive networked performance?
I am involved in the production of the performance Long Distance Hotel. This is an artistic project that aims to build a virtual community of artists as a process to create a theatre performance. Throughout seven months, several European artists from different countries will create a performance exclusively online and will only meet in person on stage, in July, for one week, to present this performance in Lisbon, at Teatro Maria Matos. Distance, both geographical as well as cultural, will be the factor that binds them together rather than takes them apart. I am working with artists Sergej Pristas, Gilles Polet, Judith Davis, Tónan Quito, Leo Preston.

This production takes place within the frame of ESTÚDIOS, a long term artistic project. In 2010, ESTÚDIOS will focus in promoting the collaboration between these six European artists, from different countries. Using Internet as their main tool, these artists will face the challenge of creating a piece without ever meeting in person. How will each of the invited artists be able to translate his or her creative process into a virtual language? What innovations, creative discoveries and new thoughts can arise from an internet-mediated process?

ESTÚDIOS is a regular collaboration between Mundo Perfeito, a Portuguese structure for the creation of theatre performances, and Teatro Maria Matos, one of Lisbon's foremost theatres directed by Mark Deputter. In the last two years, Mundo Perfeito and Teatro Maria Matos have organized ESTÚDIOS, a project that aims to build bridges between different artistic works and identities, promoting collaborations between Portuguese and foreign artists. Throughout the last two years, ESTÚDIOS enabled the creation of pieces resulting from the collaboration between artists from Portugal, Brazil, Congo, USA and Slovakia.

 Why do you choose to work in this way?
One the one hand, I am very interested in researching formats of collaboration between artists who live in different cultural and geographical contexts. My work has always been influenced by the need and the wish to meet artists from "somewhere else".

On the other hand, virtual mobility is both a practical answer to the limited budgets artistic projects sometimes face as well as a subject of artistic research on itself. Both aspects walk side by side, once there is always a great interest in exploring further whatever tools artists might use today to overcome production limitations they have to face.

However, once this format was developed and the artistic team was composed, it became clear that "virtual mobility", whether you call it this or not, is already very strongly present in our *modus operandi* as artists. Choosing to create a theatre performance entirely online and only meeting personally for the first time a few days before the opening of the performance became, then, only a radical model of how to explore this issue. "Long distance" became the lens with which to operate every observation of our artistic proposals as a collective of artists and this poses us many challenging questions: How will each of the invited artists be able to translate his or hers creative

process into a virtual language? What innovations, creative discoveries and new thoughts will be able to arise from an internet mediated process?

Can you trace when your interest in virtual mobility started and how it has changed over time?
Virtual mobility becomes familiar to me as a consequence of the idea of mobility being very present in my artistic pursuits. With Mundo Perfeito, I have been developing a project with Teatro Maria Matos and its director, Mark Deputter, called ESTÚDIOS. For two editions we have been working on different formats each year on how to promote collaborations between Portuguese and foreign artists. Virtual mobility became the leitmotif of this year's proposal, having already been a working theme in previous works but never fully explored.

I think the main shift in my relation with online tools happened as a consequence of looking at them as something other than tools you use before or after the actual working process. I think that one of the original questions that gave birth to "Long Distance Hotel" was: what if we use Internet as the process itself?

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
As a performing artist I am pretty much interested in the way the "virtual" can interfere with the "live" factor of performance. Of course, one can explore the possibilities of online presentation of performances to an audience, but my main aim in the exploring virtual mobility is the possibilities it allows in terms of collaborations with artists, as well as its effects on the "live" presentation. Virtual mobility not only it allows a much wider range of collaborations, but also conditions the type of collaboration. The huge benefit of virtual mobility is then, in my case, the fact that it's a tool for coming into contact and collaborating with almost any artist.

In that sense, "Long Distance Hotel" wants to create precedents for developing deeper and more consequential ways for artists to collaborate through virtual mobility. If we accept that virtual collaboration and creation processes are not only logistically friendly, but also open doors to new languages in performance, I think that "live performance" can gain from several innovative factors.

One of the main benefits I already observe at the start of the creation of "Long Distance Hotel" is the fact that, once every artist only communicates virtually, every single proposition is already a document (may that be an e-mail, skype conversation, image or video). The amount of material already accumulated only after two weeks of work in immense and there's a dramaturgist, the theatre critic Ana Pais, already working independently on those documents and witnessing the whole process in order to comment on a theoretical level on the project in real time. Soon, the internet site www.longdistancehotel.org will allow an edited and commented version of the correspondence between these six artists to be available online, evolving simultaneously with the creation of the piece.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
In my understanding, one of the fundamental aspects of the performing arts is the audience's physical mobility. The constitution of an assembly in a performance venue is something I am profoundly interested in. So, of course, when "virtual mobility" becomes as issue, I must say I face a contradiction or, at least, some dangers. "Virtual" is still associated with "individual". Our "virtual" actions are, mainly, attempts at being "physically" alone while connecting virtually to other people in the same condition. In that sense, I am attracted to it as a working tool, but not so much as a presentation tool.

Gradually, the "virtual" is no longer just a source of information, preparation and networking, but it becomes a language. Of course, virtual audiences are one of the potential factors of this language.

However, I struggle on how to use and explore "virtual mobility" and still keep and deepen the "spirit of assembly" that continues to be one of the main reasons for me to engage with the performing arts.

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Julianne Pierce an Australian curator, writer and producer specialising in digital and media arts. Since 2007 she is Executive Producer with **Blast Theory** in Brighton, UK.

How are you involved in virtual mobility/interactive networked performance?
The work of Blast Theory investigates how to engage audiences across a variety of platforms including live performance, online, mixed reality and SMS. The company often uses technologies such as gaming platforms and mobile technologies to create performance work that involves a high level of audience participation. Works such as 'Can You See Me Now?' explore a relationship between live performance (with Blast Theory performers on the street) and an audience who are entirely on the internet. Through the structure of a chase game, performers and audience have to interact with each other to successfully achieve a mutual goal. The structure invites collaboration and communication across live and virtual platforms.

Why do you choose to work in this way?
The group's recent game projects have probed the fundamental laws of games and of play, posing questions about the boundaries between games and the real world that also have important ramifications for art, performance and virtual worlds. The artists have contributed extensively to debates about the development of games as an art form and how games may be conceptually, intellectually and emotionally demanding while also engaging a wide audience. The artists remain fascinated with how technology, especially mobile devices, creates new cultural spaces in which the work is customised and personalised for each participant and what the implications of this shift might be for artistic practice.

Can you trace when your interest in virtual mobility started and how it has changed over time?
Through an ongoing collaboration with Mixed Reality Lab (University of Nottingham), Blast Theory aims to integrate emerging technologies with an artistic vision that places the audience at the heart of the work - so that participants contribute directly to their experience of the work. The group's collaboration with the University of Nottingham has grown and deepened over ten years and, to our knowledge, is the longest and most productive partnership between a university and a group of artists anywhere in the world. It has yielded four BAFTA nominations, a Prix Ars Electronica and academic papers of international significance at world leading conferences in computer science, computer human interaction and ubiquitous computing. This dialogue between scientific and artistic research now forms a core thread of Blast Theory's practice.

Blast Theory's early work was in the field of live art. From 'Desert Rain' (1999) onwards the relationship with live art and performance became less apparent and it is perhaps notable that, for example, the group's participation in Live Culture at Tate Modern was as curators of a video programme. In recent years however there has been a marked recognition of the importance of the group's thinking about performativity, presence and site specificity which has led Blast Theory co-founder and artist Matt Adams to become a Visiting Professor at the Central School of Speech and Drama and an Honorary Fellow at the University of Exeter. Books such as *Virtual Theatres* by Gabriella Giannachi and *Digital Performance* by Steve Dixon have highlighted the group's groundbreaking intermingling of the real with the virtual, the ludic with the performative and the playful with the serious.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
One of the key strengths of working in this area is to explore the role of the audience; from 'Can You See Me Now?' (2001), which places the audience online alongside Blast Theory runners, to 'Day Of The Figurines' (2006), where the audience themselves populate an imaginary town and guide its outcomes. Works such as 'Rider Spoke' (2007) and 'Uncle Roy All Around You' (2003) use the real city to invite new roles for the audience. Uncle Roy All Around You prompted transgressive actions by players as they were asked to explore the offices and back streets of the city while Rider Spoke embeds personal recordings made by the audience into it and gives the audience licence to find any path through them. These projects have posed important questions about the meaning of interaction and, especially, its limitations. Who is invited to speak, under what conditions and what that is truly meaningful can be said?

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
The field is continuing to grow with more and more artists becoming interested in working across live and virtual platforms. A particular current trend is the development of pervasive gaming and ARG's (Augmented Reality Games). For example, the British Council is presenting a Showcase of interactive work at the 2010 TPAM (Tokyo Performing Arts Market) called 'Connected', where 13 British artists/companies working in this field (including Blast Theory) will be profiled. Current trends indicate that more performance work will become site specific and location based, often using mobile devices and location based technologies. Blast Theory will continue to develop work in this field and continue to utilise its expertise and knowledge in interactive and participatory work across a range of platforms.

Future developments for Blast Theory are to look at the potential for broadcasting and reaching new audiences through producing cross-platform work in partnership with broadcasters (such as Channel 4 and the BBC). The company is implementing internal software development, in order that we have more flexibility in software development and application. We are also looking into Intellectual Property Rights and how as artists we can develop and exploit IPR.

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Niels Windfeld Lund General Manager of The World Opera project, based in Norway.

How are you involved in virtual mobility/interactive networked performance?
I am general manager of an international project aiming to create a distributed opera stage with artists performing in different locations connected to each other by high-speed network.

Why do you choose to work in this way?
I choose this way because I have always been interested in connecting people in a kind of worldwide workshop independent of space, from a philosophy of world citizenship.

Can you trace when your interest in virtual mobility started and how it has changed over time?
Well, in a way it started in 1989 with the idea of an international Cultural Workshop, and in 1999, I got in contact with Jay David Bolter from Georgia Tech, who recommended me to get in touch with Xerox PARC in Palo Alto and then I got in touch with UC Berkeley and started to create a so called Document Academy, an online document research community. In 2002 I started to get in touch with telemedicine in Tromsø and became involved in the development of a distributed health record and then in 2005/06, I worked on opera as a multimedia document and, relatively accidentally, some asked if we could use technology in this experimental opera project. So I got in touch with people at Stanford, who worked with distributed performance and since then it has grown to a very big project with artists and technologists, primarily in Scandinavia and North America.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
The benefits are especially related to the possibilities of making the global village a reality! To be able to perform and interact together across long distances and improve many of the virtual communities already existing thanks to Facebook etc. etc.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
I see the possibility for creating many worldwide stages in a distributed format!

See also: World Opera – bordering on the impossible

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Venzha Christ media artist, researcher, composer, experimental DJ, curator, co-founder and Director of The House of Natural Fiber (HONF) in Yogyakarta, Indonesia.

How are you involved in virtual mobility/interactive networked performance?
The House of Natural Fiber (HONF) - Yogyakarta New Media Art Laboratory has employed virtual mobility in several activities of the Education Focus Program (EFP). In the 2004 project ICU in ma mind, I conducted a performance inside an illegal space. The performance took place inside an Intensive Care Unit (ICU) room of a hospital in Yogyakarta. Due to the illegal artistic concept, the performance could only be seen by the audience through its documentation while, at the venue, collaborators was kept hidden for their safety. The performance was an exploration of electromagnetic field and its effects on the human body as captured inside the ICU room. The electromagnetic field was transmitted by high tech hospital equipment installed in the ICU room. The performance was done in two versions, one with and one without anaesthesia.

In BTS Shelter Room COMM project (2004), I did an interactive sound installation inside a BTS shelter facility that transmits and receives digital signals from mobile phones. Once again, this interactive installation was done illegally while the performance method was an intervention in the signals traffic inside the BTS. This interactive installation was a response to the fast growing development and consumption of global technology in Indonesian society. The huge demand for mobile technology also increases the number of BTS constructions to enlarge the area scope of service providers competing with one another to get the largest number of consumers in Indonesia. The artwork itself could only be seen in documentation of the installation through audiovisual material.

In one of HONF community-base organised festival called Invisible Video! YIVF#05 – Yogyakarta International Videowork Festival, 2009, HONF invited the participation of local and international artists by contributing videoworks. The festival itself was conceptually seeking the exploration of a festival atmosphere with non-existing (or creating an invisibility) of the participants in physical forms. With this festival, HONF's intention was to challenge local and international artists to use internet tools as a platform and/or gallery for their work and how the artists use their creativity to let their work present themselves to the general public. The challenge received various responses as there are minimal ways in which artists could present their artwork (e.g. only title and videowork are available for the artist to use in this festival). The festival also received attention and participation from local artists as mobile technology user in Indonesia was massively developing in recent years.

In CELLSBUTTON, Yogyakarta International Media Art Festival (since 2007), produced annually by HONF, the first media art festival in Indonesia based on educational field, there is also a lot of work with "virtual mobility" issues and activity.

In one VJ school project initiated by Tommy Surya aka vjnumberone, created an interactive generated visual triggered by Twitter Feeds from the audience at a club. The audience could send their words and sentences using mobile phones to a specific server to be processed by a patch under Fluxus program environment / live coding. This collaborative project with VJ Manticore offered the audience a playful exploration of mobile technology to see how they respond to other beneficial ways of technology.

In breakcore_LABS HONF used live streaming technology for international breakcore music lover to watch breakcore_LABS events through the internet. This project is led by Julian "Togar" Abraham and provides virtual access to global community with the collaboration of DeadMediaFM. breakcore_LABS' intention in providing this access came out of the low consciousness due to very few experimental music platforms being available in Indonesia. breakcore_LABS events in live streaming is HONF's consideration to provide wide accessibility without the need for mobility of the audience who are interested in experimental music performance.

Since 2007, Educational Focus Program (EFP) workshops, presentation and discussion always provide accessibility for the global community using internet technology. HONF considers the fast growing technology available now to be a very useful tool to enlarge the scope of the flow of information. HONF believes the EFP method of using generic infrastructures combined with accessible technology could create significant impact in knowledge-sharing, which is the core of EFP objectives.

Why do you choose to work in this way?
This method is part of how HONF works. HONF believes in the combination of virtual and physical mobility in EFP activities. Based on the situation and condition of Indonesia, internet and its development have become an accessible technology especially for the younger generation in Indonesia. HONF considers this as an advantage for EFP methodology to expand the scope of its activities using the internet. The other consideration was also based on the situation and condition in Indonesia in response to the use of internet technology. As a media lab in Indonesia, HONF has to give an example in the use of technology that could provide benefits to society. In the implementation of EFP, using internet technology to expand the scope of knowledge-sharing is one of the best examples of this.

Can you trace when your interest in virtual mobility started and how it has changed over time?
The interest in virtual mobility began with HONF artistic exploration into untouched or prohibited areas where the general public is excluded in terms of access and creativity. Realising that a limitless artistic exploration can be made in a collaborative way of responding to the situation and condition in Indonesia, HONF used virtual mobility as one of its tools to provide a platform for the presentations of artistic works. As time evolved and technology developed, the functionality of internet access provides limitless audience and participation around the globe. As an advantage that could bring significant impact, virtual mobility now provides big access and is fast developing and enlarging in the number of users.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
The greatest benefits and strengths of virtual mobility are of course global access that the internet can provide. It breaks the boundary of locality in physical presence that allows us to achieve collaboration, connectivity and audiences on a global level. Virtual mobility in terms of performance challenges artists to creatively explore its limitations and advantages.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
FUTURE = NOW :)

Right now, the growth in internet use in Indonesia is significantly increasing the number of users. Mobile technology has big consumption in Indonesian society which allows even more internet users. This offers many opportunities for information exchange and breaks the boundaries of distance. In the near future HONF envisages that physical and virtual application will still be necessary for our activities in Indonesia. Applications based on the Education Focus Program have a big need to build an understanding of the use of technology in the society. As physical and virtual mobility will bring new issues to the locality, and bring local issues to a more global discussion, a platform for discussions and solution-seeking through discussion will be a generic infrastructure for global society. Daily chores will be done by virtual means and technology will be the "right hand" of humans to do anything. However humans also need to interact, which will create new interfaces and new concepts. These will be the new virtual arenas for performing arts and new media.

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Inarra Saarinen Founder, Artistic Director and Choreographer of Ballet Pixelle

How are you involved in virtual mobility/interactive networked performance?
I am founder and artistic director of Ballet Pixelle (formerly Second Life Ballet), the first and foremost virtual ballet company performing in the global virtual community called Second Life.

Why do you choose to work in this way?
I am interested in how physical and virtual dance intersects and interacts. The possibilities are endless! We are dancing into the digital future ...

Can you trace when your interest in virtual mobility started and how it has changed over time?
My specific interest began four years ago when I found that I could create perfect professional dancers who could work beyond body and joint limits and gravity as well as have unusual capabilities. My key experience was when I was able to transform a young woman into an old woman as she turned in space.

I am now thoroughly convinced of the creativity and future of this art form. I am developing the vocabulary of virtual ballet. We are working more on melding the realities and I find this tremendously exciting.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
Some of the benefits and strengths of virtual dance are:
1) the ability to remove gravity and other physics effects
2) to transform completely in into another gender, body type, costume, animal
3) to combine and contrast physical and virtual dance

New choreographies can be created. People can see the performances from all over the world. New audiences are created. People with limited functions can participate, such as in hospitals, agoraphobics, and so on.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
We are now beginning to work with physical dancers and meld the realities.

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Elizabeth and Jimmy Miklavcic co-founded [Another Language Performing Arts Company](#) in Salt Lake City, USA in 1985.

How are you involved in virtual mobility/interactive networked performance?
Elizabeth and Jimmy Miklavcic are the Founding Directors of Another Language Performing Arts Company, established in 1985. The company has focused on interdisciplinary dance based performance art works since its inception. In 1995, Another Language established the first arts organization web site in the state of Utah. In 2003 the company created its first [InterPlay](#) performance – termed real-time, live, distributed, surrealist, cinema – these collaborative multi-site performances have involved many university institutions in the United States, Canada, and the UK.

Why do you choose to work in this way?
A driving motivation is the potential to meet and work with artists world wide without the geographical and travel restrictions. Multi-site performances can combine the skills of many different artists in different locations, so that the collaborative result is bigger then the individual participants.

Creating an InterPlay performance is multi-dimensional Elizabeth and Jimmy need to visualize many different elements in the performance to be able to create a coherent statement. Some of these elements are – how to combine the live performance contributions, how to structure the performance into a beginning, middle and end with dynamics – including who is featured at different times in the performance, creation of the cinematic display including multi-layered graphics and video window displays, how does the live component at the sites blend with the performances on the screen, plus much more.

Can you trace when your interest in virtual mobility started and how it has changed over time?
Jimmy Miklavcic, a multimedia specialist at the Center for High Performance Computing (CHPC) at the University of Utah, began researching Access Grid[tm] videoconference software in 1999. Working with Elizabeth Miklavcic, also a multimedia specialist at CHPC, they developed performance applications using the Access Grid.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
As the host site, Another Language provides many different viewing options for the audience member. A live venue is available; where the audience can see the performance at the University of Utah, as part of the live audience they see the behind-the-scenes filming of the piece as if one was viewing a live television performance. The audience at each remote site can view their live component as well – as a result the performance looks different depending on where the Access Grid site is located. People with the Access Grid software can view the performance. A live QuickTime stream is sent through the commodity network of the digital mix. The digital mix is also streamed into the University of Utah's Marriott Library Island in Second Life.

- *Collaboration*: the ability to work with artists from various geographical areas and artistic disciplines and culminate the shared work into a world wide simultaneous performance

- *Connectivity*: it is incredible to be able to communicate with geographically dispersed artists on a daily basis through videoconference technology. We share and try new artistic ideas, build relationships and in many cases, never physically meet.

- *Audiences*: although we have built an audience base here in Salt Lake City, it has been a challenge to develop audiences at participating sites. Many of the performance spaces are not designed for performance, and many of the traditional performance spaces are not

designed with a technology and network infrastructure. It has been a challenge to develop a distributed audience. We have also utilized live streaming through our website, Second Life and Access Grid technology in order to expand our idea of audience. Audience is no longer restricted a single geographical area.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
Another Language's distributed performances are built upon a concept that includes participants, content, venues and audience. In order to develop this concept further, performance spaces built upon a technological infrastructure is needed. Portable devices are giving the individual more flexibility to view works, as networking improves, performance arenas will expand into more outdoor spaces and the concept of performance will continue to evolve, limited only by the imaginations of the creators of works.

At this time in the development of virtual, multi-site performances much of the work that is occurring seems like a general wash of experimentation. As the novelty of virtual communication begins to wear off refinement of the works, such as improved camera work, lighting, and filming will serve the artistic works better.

Funding to support the artistic and technological research in a more creative approach to information technology is critical. Granting organizations must step up to include the investigative process as well as the final outcome.

Critical observers: the long view

Rob van Kranenburg innovation and media theorist involved with negociability strategies of new technologies and artistic practice. Author of The Internet of Things.

How are you involved in virtual mobility/interactive networked performance?
In maintaining connections and friendship through a mailinglist, bricolabs.

Why do you choose to work in this way?
Because locally you only have that much connectivity and diversity. The most important thing is to be able to find like minds globally.

Can you trace when your interest in virtual mobility started and how it has changed over time?
It began with notions of climate change and bigger pictures of scale and economy but also in terms of questioning the format of conferences, meetings, regular updated events as more ritualistic then really inviting people to challenge, confront and change.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
In terms of real work and real change on the ground one needs to look the other in the eye to know if it is good to work with someone. From that moment on things like skype are unbelievably helpful. Just think back to the days of the medieval wizards and their crystal balls!

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
My field is going to be more and more real change on the ground and political action. Organizing our own wireless structures is paramount for that. In the performing arts the question to me is more

about how the internet and mobile phones enhance the performativity of everyday life as such through facebook, twitter and all kinds of games.

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Klaus Nicolai co-founder of CYNETart international festival in Dresden, of the TMA Trans-Media-Akademie Hellerau and author, project designer and mediator of European Tele-Plateaus

How are you involved in virtual mobility/interactive networked performance?
At the Trans-Media-Akademie Hellerau (TMA) in Dresden we have been engaging in the network of interactive stages and walk-in installations since 2006. This work is based on the exploration and testing of local virtual environments, which is facilitated by camera-motion-sensing technologies (EyeCon; Kalypso) in close co-operation with the engineer and artist Frieder Weiß. The differentiated recording of body movements in their space and time parameters (acceleration, expansion, positioning etc.) is used for a real-time control or body recomposition of virtual sound and image environments.

On the basis of the applied network technology (OSC) we are capable of creating virtual hyper-environments, where performance artists as well as visitors at various places in the world can immerse simultaneously. This provides the opportunity of direct contact almost in the sense of "contact improvisation". At the same time the trans-local hyper-environment stands for a new form of co-production within the laboratory: we run a kind of extra-terrestrial space station, which we build and control together remotely from various base locations; it can be boarded anytime and it can randomly be used to get in touch with one another.

At the festival theatre in Hellerau we have been conducting workshops on virtual environments for many years. At present we are working on the project *European Tele-Plateaus – Transnational Sites of Encounter and Co-production* (ETP). In this Lab-based project we are developing performances and installations in trans-local virtual hyper-environments together with partner institutes from Madrid, Prague and Norrköping. Funding for this project is provided by the European Union.

Why do you choose to work in this way?
As a cultural science researcher I have been involved in questions of perception for more than 20 years, particularly with bodily perception and the "destiny" of the human body in the course of development of modern civilisation. The loss of the sensate body perception goes along with a variety of compensation mechanisms, body cult, stupefaction and the state of ecstasy. Yoga, meditation, bodybuilding, sports, fashion and various types of body manipulation (drugs, self-harm) are phenomena that underline the human need for perception of the own body and for physical contact with others.

In the performing arts, the moved body is artistically and artificially represented or reconstructed; this is especially the case in a dance performance. In most cases however this remains an isolated form of drama. The developments in the interactive design of games also reflect the need of a physical interaction with virtual spaces, where the interface and the storyline are mostly quite mundane.

I am fascinated by the possibility of a sensate human encounter on a world stage, where they can play, dance and experiment together, irrespective of ideologies, religions, culture or scientific circumstances. And all this - without having to cross long distances! Personally I would associate this with a sensate form of world citizenship. This idea served as backdrop for establishing the Trans-Media-Lab in 2007 together with partners from the business community. Apart from the possibilities

of networked interaction we are exploring types of learning and body perception therapy in interactive virtual environments.

Can you trace when your interest in virtual mobility started and how it has changed over time?
First encounters with works by e.g. Tod Machover (MIT) and David Rokeby stirred my interest in interactive virtual environments back in the 90s. Then in 1997 I founded the media art festival CYNETART in Dresden and put the human body as "base medium" into the centre of the media art, which corresponds with the tradition of the festival theatre Hellerau at the beginning of the 20th century (Mary Wigman, Adolphe Appia, Émile Jaques Dalcroze, Laban). Encounters with the *Palindrome Intermedia Dance Company* in 1999 led to a continuous and still ongoing co-operation with Frieder Weiß. In 2003 I developed a concept for networked interactive stages and installations, which we have been putting into practice since 2007. The change of perspective, from a local to an interactive environment, is a key element that I have been using from an early stage onwards and is realised by means of the camera-motion-sensing technology.

The special, fascinating thing about networked, interactive environments is the direct, yet trans-local feedback between body action and perception of body, society and space. Individual motion is at the same time a sound and image process at all networked "hyperlocations", so that across long distances there is a new connection between inner perception of body and outer perception of space.

After having worked on prototypes of networked environments for more than two years we successfully staged the performance "*ETP_body-spaces09 – Explorations of Nearness & Distance*" in December 2009. It took place simultaneously in Dresden, Madrid, Norrköping and Prague. Four performance artists are acting on a trans-local hyper-stage, consisting of multiple sound-image environments, for approximately 45 minutes. The time-lag is only about one fortieth of a second (i.e. not noticeable!).

Today we know: virtual environments are comparable to completely new instruments. They can be used for the exploration, testing and learning of new body languages, the interrelationship of movements and mental connections. It is a place where highly complex and trans-disciplinary relationships between art, technology (body) perception, psychology and trans-local identity as well as physical presence and re-presence come about. The ETP-Performances have been rehearsed and performed for several days. The virtual environments there and then remained stable, but the quality of the performing process improved considerably over the period of the three evening performances. The contact among the dancers, their "body communication" developed throughout the rehearsals and performances towards a real-time composition. The crucial point is the outcome: a raised attention, a sensibility to the absently present individuals and creating an awareness of this fundamentally new form of artistic performance.

Now we know: performances in trans-local hyper-environments are feasible. At the same time we know that we still can and have to learn many lessons in this area. To this end we require more training, research and development and more time for testing! We are still at the very beginning!

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
I think there is added value in:
  a) the opportunity to interact in a sensate way with other human beings/artists across long distances using your whole body sensitively
  b) the inter-disciplinary co-operation and research across long distances
  c) the development of new ways of perception (perception of oneself and the world around)
  d) the extension of performing arts (contact improvisation, real-time composition, bodyspace-relations) in regards of physical presence and re-presence

e) the trans-national, global citizen nature of performances for the audience
f) the extension of the "world stage"; making it a site of encounter outside of hermetical and classical stages.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
For our long-term research and development processes a stable network of European institutions is needed. In their work they have to be on the same level with regard to networked interactive environments for performances and permanently network-linked locations. Furthermore there are corresponding personal, technical and space requirements that go along with an appropriate budget.

Currently there is still a wide gap between the people who have professionally been involved in "body art" and performances for centuries and the small group of people, who have embarked onto the journey that explores new opportunities in performing (moved) and networked (virtual) sound and image environments only a few years ago. It is hard to find a composer, who can grasp the nature of a virtual sound-space-composition that is only being realised by moved bodies in a sensed mode and non-linear dimension. A similar statement could be made about picture and video artists. In this regard there is an enormous need for artistic research with challengingly high technical and other standards. Only a few of the institutions who have taken part in the project thus far can meet these requirements and have the necessary funds in order to work on the exploration of this new form of trans-local physical body presence with its media (audio and visual) nature.

I can imagine that in future our work will not just spread across cities in Europe, but that we will also create virtual sites of interaction at "developed" and "less developed" parts of the world, enabling people to meet in a fundamental and sensate way. They should be able to experience and exchange their playfulness, their bodily "élan vital" and their sense of being a living creature irrespective of their language, social status or belief.

Networked virtual environments are not the extension of the theatre and the classic forms of performance using different means, but represent their removal and an opening up towards new trans-disciplinary and trans-local co-productions for the production of "world stages" geared towards real world citizens.

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Helen Thorington writer, sound composer, and media artist based in New York, whose radio documentary, dramatic work, and sound/music compositions have been aired nationally and internationally for some thirty years. She is founder and co-director of Turbulence.

How are you involved in virtual mobility/interactive networked performance?
I have been involved with what we call multi-location performance events since 1997. They are interactive and networked.

Why do you choose to work in this way?
I haven't worked in this way since 2001. Initially it was "new", exciting - it felt like we were standing on the edge of the universe looking out. Turbulence.org continues to fund multi-location events and to use technologies in our lecture series and symposia linking geographic locations (usually Boston or New York City) to Second Life where many individuals from around the world participate as avatars.

Can you trace when your interest in virtual mobility started and how it has changed over time?
I first learned about and took part in a multi-location performance event in late 1996 when Remo Campopiano, then director of artnetweb in New York City, co-organized *Port: Navigating Digital Culture* at MIT and encouraged me to do a musical event that would originate in New York City and be heard in the List Visual Arts Center at MIT, Boston. Once a week, for a period of nine weeks, I made the trip to Brooks Williams' studio, Harmonic Ranch, in lower Manhattan, and linked via the Internet to the List Center to present an open-ended sound composition centering around the idea of turbulence that enlarged and altered as live improvisational performers interacted with it. It was through my involvement in Port that I met Jesse Gilbert, who handled all the audio for the Port exhibition, and Marek Walczak, who was already deeply involved in VRML.

In 1997 Gilbert and I discussed the possibility of multi-location musical performances and together with Mike Mittelman drew up a project designed to teach other organizations the how-to of multi-location events so that we could perform with them. We began with Harvestworks in New York City and the Center of Contemporary Music at Mills College, CA. In 1998, an impressive list of musicians took part in three online performances [4] emanating from two New York City locations and Oakland, CA: Feedback, Loose Ends/Connections and Spaces. Unfortunately a 2008 Real Audio meltdown on our server destroyed the music files from these performances. We have, however, located digital copies of two of them but have not uploaded to the turbulence server yet.

Gilbert and I went on to join forces with Marek Walczak and develop a new multi-location project entitled Adrift (click on 2001 Demo and follow instructions [5]), an evolving multi-location performance event that combined movement through space, multiple narratives and richly textured sound produced by Gilbert, Walczak and myself from three different locations. Our initial presentation was an unsolicited performance – myself at the Ars Electronica Festival 2007, and Gilbert and Walczak at different locations in New York City. The wonder was – it worked! Our contributions came together, thanks to an applet on a Boston, MA server; and a small audience – ourselves, and a few people at the Ars Electronica Festival who accidentally happened into the room in which I had set up – were able to see and hear it. We did five performances from Ars Electronica.

At that time Adrift's screen was divided, with the VRML above and the text beneath. Two years later, with greater processing power, we were able to integrate text and VRML, as well as make use of real-time streams of video and radio. Our demo is from this later period. We continued performing *Adrift* on a regular basis until 2001. Our final performance was at the New Museum in New York City in January 2001. It remained there as an installation until February 2001. I loved *Adrift* but the collaboration was difficult and rather than continue with it, it seemed best to bring it to an end.

Beginning in 1999, Turbulence commissioned multi-location work. We supported Jesse Gilbert's *Finding Time*, a collaboration linking performers on six continents in a series of live musical events, produced in 2000. We also supported his *InterAxis* (2002), an investigation into the possibilities of improvisation, form, and presentation in multi-site, network-based performance. Gilbert is very articulate about his interests in these events and has written well about them on their sites.

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[4] These performances worked, in that live streams from all three locations came together and were audible to participants and to internet listeners. But the musicians proved conservative and resisted working with the medium's limitations. The music was therefore traditional improvisation.

[5] When using the 2001 demo, please remember that there are three screens. In a performance space with three computers and three projectors, the audience will be partially immersed in the work. To alternate between the three screens, right click on the image while it is playing.

Not all our multi-location commissions were for musical work. In 2005 we commissioned *IN Network* by Michael Mandiberg and Julia Steinmetz. This was an extended cell phone life-art performance about distance, communication, intimacy, telepresence, and living together while apart. During the month of March, Mandiberg (New York) and Steinmetz (California) performed their relationship via a photo moblog and podcasts of their phone conversations. There were also several live audio webcasts of the artists sleeping together on their cellphones.

In 2007 we commissioned *The Simultaneous Translator* by John Roach and Willy Whip. *SimTrans* is a Windows based audio interface that enables anyone to load audio streams and manipulate them in real time on the Internet. *SimTrans* makes the delays and fluctuations of the Internet visible and audible. The Internet becomes your collaborator as you create your mix, and the instability you usually try to avoid becomes a tool for creation. Distance and delay are manifest within the interface numerically and as a series of sliding heads; there is also a link to Google Earth where you can watch the dynamic flight of data travel between yourself and the audio source. *SimTrans* was performed live in April 2007 with performers from the US, Spain, China and France.

 In 2007 we developed *Pulse Pool* with the Symbiotic Media Group at Oklahoma University. This interactive installation connected two cities via the human pulse, using Internet and radio-frequency identification (RFID) technologies to allow people in Boston and Oklahoma City to experience one another's pulses simultaneously in three locations: a Boston gallery, turbulence.org and In Second Life. *Pulse Pool* consisted of two ten-foot, round pools of water—one located at the Museum of Science in Boston and the other at the Fred Jones Museum of Art. Visitors stood by the pool wearing computing devices that tracked their pulses. Each individual's pulse was represented in real time by a series of water drops released into the pool from above. By watching the ripples from the droplets, visitors could see their "pulses" meet and interact with the "pulses" of others by the pool. The two pools could also relay information to one another via a web interface that caused pulses from the other city to become visible via LED lights under the water of the city in which you were.

Two recent works: *Nothing Happens* (2009) and *Fuji* (2010). *Nothing Happens*, a 2009 project by Nurit Bar-Shai with Rich Miller, Yishay Schwerd and Zach Lieberman, was a networked online performance where viewers worked together to make a series of objects tip over. The performance consisted of three acts, performed sequentially. Each act contained a central protagonist: a cardboard box on a high shelf, a clear pint glass full of water on a tabletop, and a wooden chair. In all three acts, web-enabled physical devices controlled by viewer's clicks made these objects tip over. When they tipped, the performance was over. Each change was recorded as a snapshot-image, creating not only an archive of the work, but a collective creative result: a stop-motion-animation sequence, in which viewers can browse through the entire history of the performance both.

A year later, Nurit Bar-Shai produced a second "performance work" entitled *Fuji* (2010). Unlike the other works mentioned above, this one does not involve humans in its performance. Instead for the space of one year, January 1, 2010 to December 31, 2010, it appropriates, processes, and interweaves several existing webcam feeds of Mount Fuji.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
Multi-location allows more people to participate, and that allows for greater diversity. It also allows unlikely collaborations and conversations in that many of the people we connect with "virtually" are individuals we would never otherwise "meet" or get to know.

 How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
I don't think we can seriously consider the future of any single field or artistic discipline, when hybrid forms already exist and merging and mutating are in process all around us. Whatever the arenas for

participation in the performing arts may be, they will be temporary as merging and mutating continue, and we come to understand that the strength and vitality of our future lies in creative practice not just in traditional "art" forms, but in many forms.

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Don Foresta research artist and theoretician using new technologies as creative tools, coordinates MARCEL network for artistic, educational and cultural experimentation

MARCEL is an attempt to provide a tool to bring people into the very high bandwidth network space, into what I consider to be a different medium, a new medium.

If you look at the history of the media throughout the 20th century, you realise that in every new invention in communication the artist came to it 20 years later. If you date cinema from 1900, the first art films were in 1922. Television is another blatant example. If we date television from 1948, the first video art appeared in the mid 60s. Artists always came to the media tool a generation too late to have any kind of impact on how that tool was integrated into society. It was already well established with either a political or a commercial agenda and what the artists were doing with the same tools had almost no impact on how that tool was used or understood socially.

I have been working on the network for a long time and I thought that maybe we had one more chance to turn this around and that when the new medium of the network started, maybe we could be there from the beginning and have some kind of impact of how it would be integrated into society and how it could work as a cultural space. The medium that I'm talking about is not the internet, it's not the web which has been around for a while and is already veering off into the commercial world. The medium I'm talking about is the very high bandwidth network that allows real-time interactivity between human beings. I consider that to be a new medium and the objective of MARCEL to occupy that space, so that when the commercial world finally does discover it, we'll be there. We'll be there and we'll be able to say, you can have that part of it, but this is ours, so keep off the grass.

Art & the Network: why MARCEL?
Art has been migrating to the network ever since it began, my own first experience dating from 1981. Today many artists are already active in the network space and a very dispersed artistic presence exists and has existed for several years. Bandwidth has improved and has become readily available meaning that more elaborate artistic experimentation with even less expensive connections is now possible.

In that light, why MARCEL? At its inception, MARCEL was an original idea which was meant to bring attention to the importance of art and artists being present in what was becoming the new communication space. It was a mobilising idea for raising consciousness about the importance of the artistic dimension in communication and communication technology and the social sphere in general, particularly when confronted by new tools, processes and procedures. The question is whether such a mobilising idea and the effort behind it is still necessary.

I feel quite certain that it is. Even thought there is a massive amount of art – not all good or interesting – operating over the network, it is scattered throughout the network space and lacks an identity giving it any force or influence vis-à-vis society as a whole. It lacks an immediately identifiable presence giving it the necessary weight to affect the functioning of the network in a direction useful to art. Not everyone in art has to be part of that movement but a critical mass is

essential to create a visible space where art can function and where artistic concerns can be addressed.

Institutions today, particularly those involved in art, education and culture, cannot ignore the network. It is becoming more and more the dominant technological manifestation of our society's communication space where those efforts will increasingly take place and be transmitted and exchanged. Not being present in it will make their efforts incrementally irrelevant just as those cities which declined and were bypassed by the railroad saw their importance subside. For those institutions to remain effective a strong network presence and operation is crucial, meaning that time, effort and resources must be directed to it. The network dimension must be integrated into their programmes and their members made aware of the necessity to operate within it.

The experimentation that has been going on in multicasting is a case in point. Access Grid, the most prevalent platform that exists for it, has been used by artists for many years. While artists are good at dealing with the imperfections of any technological system, often turning them to their advantage, Access Grid because of its limitations has disillusioned many artists after initially trying to work with it. That has been because that platform has not been evolving in a way that artists can appreciate let alone use. The conclusion is that there is still not a multicasting platform that functions well for art and the technological sector is not about to build one.

Artists must take that in hand. Thus the need for coordinated cross-disciplinary working groups addressing such developmental questions in the context of art.

One of the interesting yet frustrating aspects of the network and its development is the fact that many people around the world are working on the same thing. For example, hundreds of people are working on archives of past work and many of them are developing incompatible systems, tools and procedures – duplicating what is happening elsewhere. That energy could be better channelled and directed through collaboration and the results more spectacular and efficient with a greater impact on the operation of the network. The combined efforts of artists would have a larger say on how the network evolves.

Another compelling reason for artists to act together is that Internet is moving in the direction of other 20th century media in that it is becoming more and more driven by advertising. This will mean the decisions concerning the future of the network will be made to accommodate that activity to the detriment of person to person communication and the founding ideal of Internet and the Web. An effort must be made to preserve at least parts of the network space for art, culture and education. Artists must have a network identity to participate in that demand and to assure that they have an open space where experimentation can continue.

The need for services for the arts over the network is enormous and cannot be addressed by one or two institutions. This again should be a joint effort with several partners working in small teams to develop functions, as well as data bases, which best meet their needs but which can be shared with others. The sum of that activity would definitely be greater than the parts and it should have a central point where those efforts could be easily identified and communicated.

Art in most developed countries is funded by national governments. Art over the network is international and does not easily fall into a category recognised by most government funders. An internationally recognised art effort can address this problem more easily than individual artists or arts organisations. By the same token, success by one member in one country becomes a precedent for others in other countries, which can be used to move funding organisations to recognise the importance of one or another activity. This was one of the founding ideas behind MARCEL, to be

able to build on each others' successes as a way of moving forward in what was then a vacuum. An example is the success members have had in bringing the operators of the academic network in the UK to recognise the validity of having artists-run centres as part of the academic network. That precedent could be useful to artists elsewhere. Other examples exist.

Another reason for a coordinated artistic presence over the web is that much of the content over the web comes with little or no evaluation. Value judgements are suspended as everyone scrambles to be present in network space. "Gate Keepers" are rare and there is a growing awareness of the need for weighing content, recommending some things over others. This again should be a joint venture directed by the participants themselves as those most concerned by the communication of art. And this before it becomes another commercial exercise functioning uniquely through the operation of the market where the incentive to doing anything useful is replaced by the drive to make money.

MARCEL is also an experiment in self-organisation, a totally lateral organisation with no central governing institution. There are project coordinators, managers, heads of working groups, etc., but no CEO making the big decisions. I have acted as a kind of international coordinator to get the network started, but I am moving more and more into the background as aspects of the network take on a life of their own. Most coming together on the web consists of groups of unassociated people connecting to express their self, more often their ego. Very little collaboration happens and most communication is one-way only.

MARCEL is based on collaboration in virtual space and could be seen as a prototype of a new horizontal organisational structure including multiple independent parallel projects. It is made up of independently collaborating smaller structures, working groups, web managers, which, in the long run will make up its overall operation – networks within networks within networks. Whether it will work is too early to tell. That will be the test of its third five-year plan which is where the project is at this point in time.

One of the interesting aspects of this formulation is that it is being built principally by artists or people aligned with art. As the artist Robert Irwin describes it, "perception is the subject of art" and "art exists not in objects but as a way of seeing". The process of communication is implicit in art and artists using communication technology not only expand their communication potential but also reflect on the operation of those technologies. Their efforts integrate those tools into our culture at a level considerably different from commercial media. This brings to network development a different modus operandi, one closely related to the traditional role of art, communicating the results of a personal interaction with one's environment in an aesthetic manner through mastering certain tools of communication. Artistic collaboration around that goal has always existed and bringing it into virtual space is a natural step. Facets of a new Reality are to be found in the compilation of those efforts demonstrating why the physicist John Wheeler defined "Meaning - objective reality - as the joint product of those who communicate".

In sum, art still needs an identifiable territory in the virtual space of the network. It is, at this point, a very indeterminate space with a geography very different from the geographies of the past. It will not be hierarchical – a pyramid – or any of the many forms currently proposed. It will require new not yet defined roles, new professions in the arts, new art institutions as well as new functions and possibilities for individual artists. Its shape is to be determined by its activities responding to the demands of artists and their collaborators. We will know its form by building it. "C'est en forgeant qu'on devient forgeron," – by smithing, one become a smith.

October 2009

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Tapio Mäkelä researcher and media artist based in Manchester & Helsinki, founder of
M.A.R.I.N.

How are you involved in virtual mobility/interactive networked performance?
Paradoxically I am involved in a project that combines sustainable mobility with virtual presence. Within a long term art and science residency project, M.A.R.I.N. (Media Art Research Interdisciplinary Network), we host artists and researchers on board a sail boat laboratory. Virtual presence from this lab is established through locative tracing, geo-annotated sensing of the environment, and in the coming years also via a mobile version of pirate radio. In this sense it is a rather classic mode (radio) combined with very light weight low power computing components, which offers a platform for different types of artistic work. However, live performance is not the main target of this project, but rather much slower interaction and research that will lead to installations, publications and performances.

Why do you choose to work in this way?
The project can be stationary in one harbour and work with local arts organisations as well as communities in participatory projects. These instances can in turn be connected with other sites. This approach offers more options than having a lab and the project situated in one place alone. The main motivation for this particular platform though is to establish interdisciplinary research and practice on marine and littoral ecologies. And the idea of a mobile lab emerged from considering how to do the work without defeating the purpose.

I am also researching a theme called "translocal urban mobilities". It is a wider question of how in different cultural contexts artists and researchers engage with mobile technologies to create mobility in that particular location, or in relation to other localities via networks. It is an attempt to articulate a kind of contemporary epistemology of situated, networked construction of knowledge.

Can you trace when your interest in virtual mobility started and how it has changed over time?
In 1997, 1998 and 2000 I created and hosted a workshop series called Polar Circuit. These took place around the Arctic Circle in Finnish Lapland, in media schools in Tornio and Rovaniemi. Basically it brought together media artists from over 20 countries, all together nearly 200 individuals for a duration of 3-8 weeks at a time for workshops and collaborative productions. Within these workshops there was quite a bit of experimentation with IRC, streaming audio, and CU-SeeMe to also deliver performative content to events elsewhere. Networked performativity in this sense enables at least sensing presence between two remote sites, if not being so evolved yet to offer fully enjoyable performances as such.

As a result of one of these workshops I came up with an idea of Net.Sauna where I invited a few artists to work with me in Ars Electronica 1997. We had a physical sauna building at the design centre in an exhibition. I invited people like Adrianne Wortzel, Andreas Broeckmann, Toshiya Ueno and Lev Manovich to do Theory Sauna with me. It is actually a cultural tradition of sorts in Finland to discuss things in Saunas. Here, the closed space within an exhibition formed a temporal intimacy, which had a very constructive influence on the dialogue, the issues we touched, and how associative they became. People could follow the conversation on an IRC channel or on site, but not seeing us in dialogue. Funny thing was that the computer inside the sauna was hot enough - the temperature was 50-60˚C without a stove. I recall my nick in the IRC was HHeater. Remote or closed, limited social sites are in my mind necessary to create a level of intimacy and dialogue to transgress our practices and thinking. Polar Circuit series, this project and M.A.R.I.N. are all part of this line of social and conceptual moderation.

In fact, also one element of ISEA2004 that I chaired got its inspiration from this, even if it was on a much larger scale. Nearly a thousand participants joined a cruise on the Baltic Sea to do workshops, dinners, club nights, seminar sessions, network meetings and see site specific installations. One feedback I heard afterwards (besides people did not sleep much) was that they have never been introduced to so many new people within an event. In order to move people even if slightly from their every day life embodied practice identities, the contexts need to change as well. One of the challenges I feel that traditional (sic!) networked performances where audiences are still and performers are connected does not work for the audience. The performers are inspired because their experience of performing is altered, but the audiences are in conventional positions, unable to read the networkedness of the act. So more imagination is often needed to how audiences are moved. For example, Blast Theory's projects where they move the audiences or actors in IRL create an interesting tension between participants on-line.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
The first answer is obvious: smaller carbon footprint. For communication, learning and sharing skills or tools virtual mobility is very effective. However, for more sustainable relations, to use Miwon Kwon's term, on-site dialogue and work over a longer period of a time is necessary.

A very simple thought but perhaps worth saying here is... what if you consider theatre plays in their most traditional sense as forms of virtual mobility? I mean, you have an artwork that is adapted to a local context, but the text travels (if cultural translation is not an issue) rather well. The difference from a lot of real time events is that it is assumed that the meaningful experience happens between sites, this kind of networked digital *deus ex machina* or a ghost in the shell... yet for a performance audience, everything is on the stage in front of their bodies. So for various media art practices the question is rather: how can one make our created objects or processes travel for local adaptation? One interesting attempt in that has been the Bricolabs mailing list which has the idea that besides software, also lab and event concepts can travel. The more interesting side of virtual mobility is thus sharing ideas and schemas (not models) of practice, which then are adapted locally.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
If we look at popular social media platforms like Facebook or Twitter, there you have mass participation platforms for virtual immobility. At the moment I would pay quite a lot of attention into how to make artistic interventions and new concepts for these populated platforms rather than use ancient modes of staged platforms for virtual mobility performances. Also next levels of the locative arts will possibly create forms of virtual immobility to the city streets (or rural sites). In other words, performances can be staged in advanced forms of flash mobs, twitter on the fly, and what have you in the next ten years. What I find quite exciting about it is an ability to interface with new participatory audiences while encountering random passers by. Performances by Ligna in Hamburg and various staged urban freeze actions point to this direction.

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Johannes Birringer Chair in Drama and Performance Technologies, Brunel University, UK and Artistic Director of AlienNation Co., a Houston-based multimedia company.

How are you involved in virtual mobility/interactive networked performance?
Since 2000, I was a founding member and co-producer in a networked performance group called ADAPT (Association for Dance and Performance Telematics) which dedicated its collaborative online work to exploring shared performances in a distributed form of choreography using camera based

performances streamed live between locations: USA (5 sites), Brazil (2 sites), Netherlands and Tokyo. The strongest phase of activity was 2001-05, afterwards the larger group lost its organisational continuity, as participating student artists left and moved on; some of us continued two ways or three-ways work, and members on various sites continued their own explorations of telematics). The work is documented on some websites:
http://people.brunel.ac.uk/dap/np2.html
http://people.brunel.ac.uk/dap/daplive2.html
http://www.brunel.ac.uk/dap
http://www.digitalcultures.org

After leaving Ohio State University, I restarted telematic work in my new DAP Lab in Nottingham (2004-05) and then London (2006-now). Our focus had shifted to an on-going research and performance project called "design in motion" involving the development of wearables and sensor based interactive performances; some of this work now results in new online collaboration with partners in Japan.

While we still connect online to rehearse, develop work, and communicate, our current work is shown to audiences on the ground, but we present this work as "mixed reality" choreographic installations, and in UKIYO (premiered in June 2009), we included live avatar performances in a different online environment which we think of as "networked virtual performance environments" (VPE), in this case Second Life. The work we performed was accessible to users of Second Life, and we continue to explore this.

The UKIYO project is research based, and supported by grants (British Council) to develop closer partnerships with artists and researchers abroad (Japan), and we are now programming virtual 3D spaces (based on game engines) that can be navigated by the real performers. Some of these virtual 3D spaces will also be uploaded or live-streamed into Second Life (via "Virtual Brunel"). DAP Lab is also developing research proposals for wider use of networked performance collaboration, utilizing "clouds" to create a virtual e-dance studio supported by grid computing technology.

In 2003 I founded a summer lab Interaktionslabor in Germany which takes place in an abandoned coalmine in the region where I was born and attracts young and professional artists and scientists interested in interactive media. Some of projects developed there, like the 2006 "See you in Walhalla" performance, premiered in Greece, were specifically developed to involve several European partner sites contributing to the final performance through webcams.

Finally, in my role as contributor and co-producer for dance tech TV (LiveStreams), a social networking site created for the dance tech community and reaching more than 2000 members, I have started (since 2009) to live stream lectures and workshop presentations of the Brunel University Performance Research Seminar. I launched this on behalf of the Centre for Contemporary and Digital Performance which I direct at Brunel: the Centre broadcasts selected Performance Research Seminars live from the Drama Studio - making them available to anyone in the world interested in the subject. Talks and discussions are webcast live on dance tech net TV and then archived. This co-production is part of a partnership between our Centre and dance-techTV, and an experiment in collaborative live-streaming (the channel is dedicated to interdisciplinary explorations of the performance of movement and allows worldwide 24/7 linear broadcasting of selected programmes, LIVE streaming and Video On-demand).

Why do you choose to work in this way?
The work is motivated by my interest in linking live performance collaboratively with others who share the same passions for new media arts and digital performance, testing and developing partnerships (co-authorship and shared organisation), work processes, technical expertise, and

seeking to learn about the artistic and social potentials of the networked/distributed medium and the newly emerging forms of real time interactivity and mashing, or live creation/improvisation with media objects.

In the 1990s I attend workshops with Sher Doruff in Amsterdam where we also tested the Keyworks software and its potential for live instantaneous media sharing. I had been involved in the dance technology movement since early on, attended many workshops internationally, taught my own workshops, and thus came into contact with new interactive software and applications relevant to performing artists as well as to the teaching I did or the research I conducted into new media technologies for performance art. From Sher Doruff I also learnt the values of such cooperative play/compositional work. I exhibited some of the work in networked interactive installations at electronic arts festivals (e.g. DEAF Rotterdam in 2003) and also published articles on "body and internet", telematics and networked performance and wrote a chapter on these subjects for my book *Performance, Technology and Science* (New York: PAJ Publications, 2008), where I refer to it as "theatre of telepresence".
Further bibliographical links (and downloadable files): http://people.brunel.ac.uk/dap/bibl.html

Sher Doruff has written extensively on the matter in her dissertation 'The Translocal Event and the Polyrhythmic Diagram', referring to this working method as a kind of "diagrammatic approach to translocal performance practice," which re-imagines the relation of the local and global, focusing on the event-potential of the in-between. Dynamic diagrammatic processes are situated in-between content and expression, an often improvisatory, intuitive interplay of forces between performers, media artefacts and technological functions. Multimodal, translocal webjams are good examples of distributed diagramming. They collapse the space between locations to a shared field of sensation through co-operative, collaborative *composing*.

Can you trace when your interest in virtual mobility started and how it has changed over time?
My interest arose out of the dance and technology movement in the 1990s, where the testing of interactive real-time composition quickly moved to include online connectivity; I believe we did not really think of it then as "virtual mobility", but saw the connections we could make via the internet as a potential for joint performance, keeping our strong interest in the physical and real (embodiment) and the live performance through or across networked spaces. In other words, I did not really become that interested in SL or game environments or multiplayer games, even though we adopted some game scenarios for live performance linking different sites.

The realm effect of networking and communities: I have been very fortunate to travel and go to places all over the world, to teach workshops or work on-site, and thus help build more connected, alternative and independent communities of digital art practice. I am thankful for this.

As a director of projects, I also learnt, over the years, to appreciate the daunting effort involved in the logistics of co-production/organisation, across many time zones. Sometimes, with partners in Australia and Japan, this turned out to be not easy. Language and aesthetic differences also need to be approached and (regarding our Brazilian friends) differences in platforms, access, and network speed. Obviously we learnt to adapt to different realities, but this work is time consuming and not always as satisfying as work on the ground for real audiences (internet participating audiences or players are not easy to prepare or integrate when you work with compositional aesthetics coming from dance, theatre, music or film).

I would say that now, in the era of Web 2.0 or whatever internet 2 speed connections we might have in the advanced Euro-American and Japanese /Australian contexts, my interest in "mobility" is less emphasised. I am beginning to pay attention to slow time and careful development of ideas, over time, and the work on real performance and scenography, as well as the development of audiences

and of interactive technologies used in live performance (this could include interactional scenarios for installations involving the audience) make it paramount for me to work on the ground, in a studio, with my ensemble. I have become more careful and selective, and am returning slowly also to analogue techniques.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
I am sceptical that virtual mobility has (so far) opened my eyes to stronger artistic work or expression. I think the physical interaction is primary, in all senses and in all ways of working, and online collaboration can only be contributory - it is not longer for me a single or comprehensive focus. The ideas we have about social choreography may also imply that we work site-specifically, and definitely oriented to content and story-telling (narrative), so that connectivity or data space work for me now is less interesting. Unless I meet up with engineers who are opening up possibilities for us to work aesthetically and with a critical mind and consciousness on issues that interest us.

In Houston, Texas, I like to work in the theatre and develop plays; they are multimedia plays and involve performance strategies I could test over the years, but we are currently doing a play on migration and border conflict (Texas/Mexico), and bilingual communication, and I prefer to do it in a real space for local audiences, not with vaguely defined abstract "virtual" audience (not to mention "users"?) out there somewhere in the ether of the internet. The organisational side (audience building, disseminations about the work) of course uses internet and social network channels. But mobility as such is not a strength I value in art making, other than the way it allows us to be linked when we are not together in the same studio or theatre or town.

How do you envisage the future in your field/artistic discipline?
I am interested in performing good/strong artworks and building my vocabulary of multimedia or digital art/composition, enjoying also the fact that our work is often modular (multimodal) so that it can be presented in different platforms and across all kinds of media: real experience of our movement art or choreographies (dance and media) swarms outside the theatrical frames or image frames, into the social, so to speak.

The image or sound elements (performance objects as I now also call them) provide new frames for embodiment and affect, stories and narratives, which are today prolonged beyond the initial theatrical or framed image, distributed into other performances, festivals, rituals, websites, contexts, collecting and other activities. These are not just a supplement to the event of the choreographic movement piece but are also perhaps event(s).

This connects to tentative openings in blogs, joint writing, re-mashing and collaborative sharing work. This possibility of performance machinima interests me. I also like writing and maillists and the discussions we have (e.g. Empyre soft–skinned space and CRUMB which is focused on digital curating). This is critical for the diffusion of our artistic works and practices, for education, for audience building, and political reflection on where the creative industries are now, and will be. In art schools we are now teaching/training digital born generations, and so there is a responsibility to remember the arts and the techniques we have inherited, as well as probing the developments in a networked distributed (globalised) arena.

Questions of access and human rights, privacy and intellectual ownership will keep haunting us. I am not a believer in the cultural or artistic values easily attributed to wikipedia, google or youtube fashions, and weary of the enormous, unbelievable data accumulation (and data mining that now goes on).

Where are the new virtual arenas for participation in the performing arts?
As I see it, theatre, music, dance, and also the cinema, remain culturally positioned in very important roles of bringing live audience into a collective experience. I also observe or participate in forms of activism and in proactive engagement with exploring internet platforms and networked action. For performance art I always welcome good occasions where performers can link up and create an experience (a networked concert, an installation in Second Life, a distributed event, etc.) or where media artists exhibit challenging works (such as Rubin/Hansen's "Listening Post" installation which was up for a long time in the London Science Museum and seen by many thousands.

I hope that performance and visual/sonic art can flourish by its inclusion or occasional migration to virtual arenas, but I don't think I see the "virtual" as a solution to anything, especially not as far as embodied physical and psychological/emotional relation, friendships and partnerships are concerned. I can work with peers (online, when they are far away) once I know them and trust our process, I feel one needs to know the other person on a deeper level to make significant performances together (as you would in a music group – you need to rehearse). The multiplayer online game model, being active in a game scenario, is not as easily transferable to the performing arts, as performance dramaturgies require human sensibilities (and sensorial dimensions) which cannot be replaced by virtual technologies or software or recognition/vision systems.

Information and online tools: practical and environmental aspects

Nayse Lopez Brazilian journalist, cultural commentator, founder of idança, co-director and curator of Panorama Dance Festival

How are you involved in virtual mobility/interactive networked performance?
I founded and currently edit www.idanca.net, a webportal dedicated exclusively to the publication of news, articles and videos about contemporary dance. The space for reader comments is a meeting point for artists, researchers and audiences. Furthermore, in 2009 the project expanded to include www.movimento.org, a social network for South American dance professionals.

Why do you choose to work in this way?
I believe the internet is a powerful tool for bringing people together. On a political level, we are currently witnessing an interesting shift in the way information is broadcast. With so many publications tools available, we no longer depend solely on large media outlets, each person can publish and share their own content, in the way they find appropriate. The possibilities for democratisation are increasing.

Can you trace when your interest in virtual mobility started and how it has changed over time?
As a journalist with experience in mainstream Brazilian newspapers I had a very close look into how poorly culture is handled by these large corporations. The rise of blog platforms appeared as an alternative to this situation. At first the idea of publishing independent content was revolutionary. Over time, as publication platforms became more sophisticated and social networks became part of our lives, the possibilities for connecting with people and sharing information were multiplied.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
People and institutions that are geographically distant but have similar goals and ideas can greatly benefit from virtual mobility, especially in terms of money. With so many tools available, the collaboration between people in different parts of the world became a lot easier.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
I believe the dance community is becoming more and more accustomed to the publication and sharing tools. The number of blogs created by artists is increasing every day. The social network movimento.org has already established itself as an important meeting point for South American dance professionals and there are some other interesting initiatives such as everybody`s toolbox, a platform for collaborative creation and M.O.L – Move Out Loud, a project aiming to create a choreography with artists from all over the world.

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Guy Guypens Artistic Director of Kaaitheater in Brussels, coordinator of Imagine 2020 Network, a European networked project on arts and climate change

How are you involved in virtual mobility/interactive networked performance?
I try to do as many meetings via conference call / skype as possible. I'm trying to convince the executive director of the organisation I work for to install a properly equipped room in the building we work. It could be shared by at least 10 different internationally operating organisations in the same building. I'm trying to watch DVDs of performances instead of travelling to see them live. This is not ideal but the new generation of digital cameras and flat screen TVs made it a bit more 'realistic'.

Why do you choose to work in this way?
For ecological reasons and to save time.

Can you trace when your interest in virtual mobility started and how it has changed over time?
It started two years ago when I changed jobs.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
The benefit is in the time saving.

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Jan Ritsema independent theatre director, actor and dancer, founder of PAF Performing Arts Forum in France.

How are you involved in virtual mobility/interactive networked performance?
I am connected through PAF, PerformingArtsForum, through PAF-radio, through book and DVD distribution, through different existing websites, like The Public School, Basekamp, Resartis, Facebook, Google Wave, IMAP accounts, Skype, e-flux (we develop PERFmts as a PerformingArts pendant of e-flux), e-artnow, art-agenda, newsletters of venues, etc .etc. etc .

Why do you choose to work in this way?
It is the most efficient and fits in with the nowadays quick and speedy and ever-changing connections and connectivity.

Can you trace when your interest in virtual mobility started and how it has changed over time?
Yes, it changed a lot, of course, with the arrival of social networks like facebook, huddle and glue. And with the arrival of Skype, I started some years ago when 2.5 million were online, now it is 10 times more.

What benefits and strengths do you see in virtual mobility compared to real time physical mobility?
The benefits are: much cheaper and much faster, and often interactive, so quick responsiveness.

How do you envisage the future in your field/artistic discipline? Where are the new virtual arenas for participation in the performing arts?
I envisage and want to try it myself to do a part of the rehearsing of a piece - the part about thinking the principles – online. Advertising and so on will all go online, this fits also to the extrapolated growth of artists, who all seek their (little) audiences around them.

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vm_explore more

This section contains many additional resources to feed your imagination and to take you further along the virtual mobility pathway. It does NOT claim to be an exhaustive mapping of the global scene. Rather, it is an early 2010 snapshot of the collective knowledge, contacts and research capacities of the author and the international advisory group for this study, a kind of partial screenshot of a rapidly changing field.   Follow the links to and inside any of the following and you will certainly discover more…

histories

9 Evenings of Theatre and Engineering, 1966
In 1966 10 New York artists worked with 30 engineers and scientists from the world renowned Bell Telephone Laboratories to create groundbreaking performances that incorporated new technology. 9 Evenings was organised by Robert Rauschenberg and Billy Klüver and was the first large-scale collaboration between artists and engineers and scientists.

Aesthetic Research in Telecommunications, 1982
A multi-disciplinary laboratory at Loyola Marymount University, Los Angeles in which graduate students used performance as the mode of investigation to study and comment on their experiences of "living in" a composite-image space.

Aether9's timeline of communication art
A wiki edited timeline currently tracing milestones in communication art from 1858 (first transatlantic telegraph cable) to 2009.

Cyberformance timeline: 1975-2008
Helen Varley Jamieson's chronological list of 'cyberformance' - a term she uses to describe her experiments in live performance with remote performers coming together in real time via free internet chat applications.

Ecafe/ECI
Electronic Café International, the Original Café for the Global Village, founded in 1984 by Kit Galloway and Sherrie Rabinowitz. A networked cultural research lab: a unique international network of multimedia telecommunications venues with over 40 affiliates around the globe. Read the 1984 Manifesto.

Hole in Space, 1980
In 1980, in Los Angeles, pedestrians walking past the glass windows of the Broadway Department Store noticed something strange - they did not see their reflection. There were other people walking by, just not them. They ended up talking with the alien reflections and realised that they were in two different locations, indeed, on other sides of the USA. This work, called Hole-in-Space, was created by Kit Galloway and Sherrie Rabinowitz.

Satellite Arts Project 1977
"A Space With No Geographical Boundaries". Objective: To demonstrate (for the first time), that several performing artists, all of whom would be separated by oceans and geography, could appear and perform together in the same live image (the image as place). Part of a series of projects called "Aesthetic Research in Telecommunications" by Kit Galloway and Sherrie Rabinowitz.

The telematics timeline attempts to capture a history of enabling technological innovation, alongside important highlights. An open source project: anyone can upload new information or interpretations into the timeline via the Internet.

artists_artistic companies

AlienNation
Houston-based theatre company experimenting with cross cultural ideas and multimedia. Artistic Director: Johannes Birringer is Director of the DAP-Lab at Brunel University.

another language
A performing arts company founded in 1985 by Elizabeth and Jimmy Miklavcic, based at the University of Utah, USA. Its mission is to combine different art forms in innovative ways, and broaden access to community arts education using communications technology. *InterPlay* is a multi-faceted event consisting of two or more performances that occur simultaneously in cities around the world. The performances are concurrently captured, mixed, digitized, encoded and streamed onto the network, using Access Grid ^{tm} videoconference software and real-time distributed processes.

Roy Ascott
Since the 1960s, Roy Ascott has been a practitioner of interactive computer art, electronic art, cybernetic and telematic art. Founding president of the Planetary Collegium an advanced research centre he set up in 2003 at the University of Plymouth, UK, where he is Professor of Technoetic Arts.

Avatar Body *Collision*
Four women met online in 2001 and formed this collaborative, globally distributed performance group whose members live (mostly) in London, Helsinki, New Zealand and cyberspace. ABC devise and rehearse online using chat software. Typically spectators see one proximal performer, while three remote performers appear on webcams and in avatar worlds, projected onto screens.
2003 *Digital Creativity* article Avatar Body Collision: enactments in distributed performance practices

Ballet Pixelle
The company has over 800 members and performs in and takes advantage of Second Life. Dancers are virtual representations of human beings. These avatars, or virtual dancers, are real people from around the globe. By performing in an Internet virtual space, it breaks geographical boundaries and time zones, and allows new spectators to enjoy, in a unique way, a ballet performance that they may have not experienced otherwise. Auditions take place at the company's theatre in Second Life.

Ballettikka Internettikka
Ballettikka Internettikka is a series of tactical art projects which began in 2001 with the exploration of Internet ballet. It explores wireless Internet ballet performances combined with guerrilla tactics and mobile live Internet broadcasting strategies. Artists: Igor Stromajer and Brane Zorman.

Johannes Birringer
Artistic director of AlienNation Co., a Houston-based multimedia ensemble that has collaborated on various site-specific and cross-cultural performance and installation projects since 1993. Chair in Drama & Performance Technologies Professor at Brunel University, London.

Blast Theory

Renowned internationally as one of the most adventurous artists' groups using interactive media, creating groundbreaking new forms of performance and interactive art that mixes audiences across the internet, live performance and digital broadcasting. Led by Matt Adams, Ju Row Farr and Nick Tandavanitj, the group's work explores interactivity and social and political aspects of technology.

boDig

Istanbul based arts initiative focusing mainly on the issues of the body in contemporary and digital culture.

body>data>space

A collective of artists and designers engaged in creating fascinating connections between performance, architecture, new media and virtual worlds. Using their own collaboration methodologies and networked creation processes, the group visions the future of the human body and its real-time relationship to evolving global, social and technological shifts.

compagnie magali et didier mulleras

Based in Beziers, France, compagnie mulleras explores new technologies and dance; including *Mini@tures*: video-dance for web and stage (1998 - 2001) & *96 DETAILS* (2006-2009) proposing a fusion and interaction of distinct universes: dance, music, video, interactive and multimedia works.

Company in Space

Based in Melbourne, Australia, the company has consistently pioneered applications of new technology to movement. Their works exist in a number of media; live performance installations, video and interactive virtual spaces, accessed from anywhere in the world. Company in Space operated 1992-2004, led by Artistic Directors Hellen Sky and John McCormick.

Diving the frame . Suzon Fuks

Suzon Fuks is a Brussels-born director, choreographer and multimedia artist, based in Australia since 1996 and a 2009-2011 Australia Council for the Arts Fellow. Her work explores the integration and interaction of dance and moving image through performance, screen, installation and online work. During the two-year fellowship, she explores the frontiers of screendance and networked performance, develops new work and maintains a blog informing on the practice and process.

Don Foresta

A research artist and theoretician in art using new technologies as creative tools. He has been working for over 25 years developing the network as an artistic tool and coordinates MARCEL, a permanent high band-width network, for artistic, educational and cultural experimentation.

Nathalie Fougeras

Dance performer, working in interactive installation and mixed reality. 2008 performance: "double_skin" in the *European Sound delta project*, Sweden-Belgium stream.

K. Danse

Dance company in France which develops its choreographic practice through the dialectic between the real lived body and the virtual or screen body.

Ligna
Hamburg-based group of media and performance artists Ole Frahm, Michael Hueners and Torsten Michaelsen, who regard their audience as a collective of producers. One of LIGNA´s models of media usage, the Radio Balle, provides radio listeners with a choreography of excluded and forbidden gestures in formerly public, now controlled spaces. Others include The new Man, a theatre play without actors, which engages the audience in a complex gestural interaction.

L.I.P.S. - Cathy Weis
L.I.P.S. – Live Internet Performing Structure: how can you make two performances happen in two different places using the same ingredients?

Tapio Makela
A researcher and a media artist based in Manchester, UK and Helsinki, Finland. He is working on a book about social and cultural uses of location based media. Co-founder of M.A.R.I.N. (Media Art Research Interdisciplinary Network), an art, science and ecology research residency and network.

Benoit Maubry
Director of Die Audio Gruppe, Berlin-based art group that build and perform with electronic clothes.

Rimini Protokoll
Theatre artists Helgard Haug, Stefan Kaegi and Daniel Wetzel. Best Before in 2010 pulls the multi-player video game out of the virtual realm and rewires it for an intimate theatre setting. With a gaming controller in hand, 200 audience members each begin as an anonymous avatar interacting with a panel of on-stage experts - an electronic artist, a game tester, a politician and a traffic flagger.

Sarah Rubidge
Choreographer, digital installation artist, and dance writer with a particular interest in interactive, collaborative work. *Global drifts* was a live performative event in 2006 by Sarah Rubidge and Hellen Sky, elements of which occurred simultaneously in Australia, Britain and South Korea. It linked new understandings of bodies and environments by connecting urban architectures and continents, remote and present, live and virtual choreographies through fluid systems of streaming networks.

Paul Sermon
Since early 1990s Paul Sermon's practice-based research in contemporary media arts has centred on the creative use of telecommunication technologies. Through his unique use of videoconference techniques in artistic telepresence applications he has developed telematic art installations that have received international acclaim. See 'On The Couch' study by Rolf Wolfensberger.

Hellen Sky
Australian digital choreographer / performer / director / writer whose inter-disciplinary work bridges dance, performance, theatre, and installation extended through new technologies. She collaborates with artists, scientists, performers, composers, academics, designers, writers, architects, interface designers and programmers. Scores and technology systems often use real time data generated by the body to affect the relationship between multiple media to form total choreographies.

Sour
This Japanese music group created a communal video for their song *Hibi no Neiro* (Tone of Everyday). The video cast was selected from the Sour fan base from countries across the globe filmed via webcam. Coordinated by Sour, through the Sour Mixi Community, the video features amazingly choreographed moves from fans the world over.

Station House Opera
What's Wrong with the World? was performed in real time across two continents in 2008. Combining live performance in London and Rio de Janeiro, Brazil, with real time video links from both locations, the production used the distance between the two cities to create a third, surprisingly intimate location. It was created, rehearsed and performed via live video link. *Play on Earth* (2006) also connected audiences simultaneously in different cities and imaginary space.

Michelle Teran / Ubermatic
Artist exploring the interplay between social and media networks within urban environments, using performative action and often public participation. Winner of 2010 Transmediale Award.

Tokyo Space Dance
Research with Japan Aerospace Exploration Agency (JAXA) in Tokyo about a "body-space model". Developed Space Dance in the Robotic Universe and other projects.

Isabel Valverde
A performer, interdisciplinary choreographer and researcher from Portugal. Ph.D. in Dance History and Theory from University of California Riverside on "Interfacing Dance and Technology: a theoretical framework for performance in the digital domain". Has developed experimental solo and collaborative performance work since 1986.l

ZimmerFrei
A collective of artists (Massimo Carozzi, Anna de Manincor, Anna Rispoli) whose complex practice is located on the crossways of cinema, theatre, music and performance.

projects

Æther9
Aether9 is a collaborative art project exploring the field of realtime video transmission. It is developed by an international group of visual artists and collectives working in different locations (Europe, North and South America) and communicating solely through the Internet, Aether9 is a framework for networked video/audio performance, and the collaborative development of dramaturgical rules particular to Internet modes of communication.

Bicycle Built For Two Thousand
Bicycle Built For 2,000 comprises 2,088 voice recordings collected online via Amazon's Mechanical Turk web service by Aaron Koblin and Daniel Massey. Workers listened to a short sound clip, then recorded themselves imitating what they heard. People from 71 countries participated, the highest numbers from the United States, India, Canada, UK, Macedonia, Philippines, Germany, Romania, Italy & Pakistan. Workers were paid $ 0.06 USD. It won Distinction Award at Transmediale 2010.

connected
Showcase organised by British Council at Tokyo Performing Arts Market/TPAM 2010 of "cutting edge participative and interactive performing arts work". See review: Wisdom of the crowd

CorpusMedia
Euro-regional platform (linking Catalonia, Midi-Pyrénées and Languedoc-Roussillon) for the networking and circulation of contemporary digital performance. It focuses on choreographic composition and the development of digital tools for performance making.

CUT project

Theatre Entropia in Athens led this European project in 2009/10. Through collaborative research and residencies in still "cut" territories (Kosovo, Nicosia, Belfast, West Bank) and Berlin, it will conclude with a final multilingual, interdisciplinary, multimedia performance "DE-FENCES" (March 2010). The spectacle (between web installation and performance art), is performed live simultaneously in Athens - Kosovo - W. Bank and real-time projected in Berlin - Nicosia.

e-MobiLArt project

EU-funded project 2008-09: European Mobile Lab for Interactive Media Artists ran workshops in Greece, Finland & Austria to collaboratively create interactive installation artworks.

European Tele-Plateaus

An international initiative planned to run through 2010 aiming to create publicly accessible networked audiovisual sites: to make possible and support real-time sensory-physical interactions of people over long distances. Project: ETP_body-spaces09: Exploration of Nearness & Distance experimental performance involved four dancers with simultaneous actions in Prague, Dresden, Madrid and Norrköping.

Extended Theatre Experience

2009 project in Bristol, UK exploring how technology can extend and enhance a live performance experience. Watershed, Bristol Old Vic and Hewlett-Packard Labs worked together to create a short theatre piece that used new video and audio capture technologies in every element of the production. The team tested the capacity of the technology to capture the experience of attending a live performance. They then explored different ways of delivering this digital experience.

html_butoh

html_butoh enacts the "Global Top 500" websites and is choreographed by their real-time html structure, displaying small video clips, which match each an html tag in the code. The video clips show performers translating the "functionality" of each html tag into movement. The piece engages the public to participate in a new visualization of websites.

Julie's Bicycle

A not-for-profit UK company helping the music industry cut its greenhouse gas emissions and create a low carbon creative future. Touring Research project in 2010 assesses the greenhouse gas impacts of Bands, Orchestras and Theatres touring the UK and internationally.

The Last Days of Second Life

Project developed by Susanne Berkenheger in 2009/10 which recruited researchers for an expedition to explore a dying culture. After a five-month expedition through abandoned sectors of Second Life, the group of literary explorers "The Last Days of Second Life" has returned safely to First Life. In roughly 30 individual reports, the explorers describe how the early avatars might have lived in the now deserted zones.

Long Distance Hotel

An artistic project that aims to build a virtual European community of artists as a process in order to create a theatre performance. For seven months, six artists from different European countries try to create a performance entirely online and will only meet personally for the first time in Lisbon, four days before they show the performance on stage at Teatro Maria Matos in July 2010. Distance, both geographical as cultural, is the factor that binds them together rather than separates them.

The Lost Sounds Orchestra
Musicians in Stockholm and dancers in Kuala Lumpur used high-speed research networks to create a virtual stage and deliver a perfectly synchronised four minute live performance to audiences at the recent GÉANT Launch Event and ASEM (ASIA-Europe Meeting) workshop. The performance was the result of extensive collaboration between international and national research networks.

MADE – Mobility for Digital Arts in Europe
EU Culture Programme funded project, 2010-2011 to develop European cultural cooperation in digital arts by supporting the mobility of artists and professionals. Project involves Centre Des Arts, Enghien-les-Bains, body>data>space, Bodig and Transcultures.

Mission Accomplished
A satirist from Berlin. . . . a metaverse scholar from Tokyo. . .. and an artist from New York. . . create joint work – without meeting in person. Can three complete strangers – from different continents, cultures and creative disciplines – collaborate from afar to create a forceful artistic statement about a political event? Their work, prepared without ever meeting face-to-face, used Google Earth, Second Life, wikis and blog technologies.

Move Out Loud
"The biggest choreography project ever": an internet platform where contemporary choreographers and dancers can upload a video of a solo dance, maximum 3 minutes, starting with the last movement of the solo uploaded by the previous artist. The result is a chain of movement, a world choreography that crosses frontiers, languages, cultures, religions and socio-economic differences.

Music from the Masses
Five-year long project by artist Matthias Fritsch. He creates silent video clips and presents them online for download by musicians, composers and sound designers from all over the world who wish to produce and propose soundlayers for them. The submitted work is collated and presented on YouTube, in exhibitions and through other platforms.

Physical TV
Australian company for production and distribution of dance film, screendance, video dance or dance for the camera. Thursday's Fictions is a surreal dance fantasy environment created by Physical TV in Second Life. The company has also created a 'Mixed Reality' dance film where computer generated imagery and on stage performance combine in a blended world.

Post Me_New ID
2007/09 European project examining the complexity of 21st century European identity through an exploration based on the effect of digital technologies of the body and identity. Dare We Do It In Real Time? performance presentation. Book and DVD available.

Public Avatar
A project documenting the relationship between virtual reality and our perceptions of self and society. This installation allows a global audience to explore real-world locations remotely, and to interact with objects and people in those locations through real-time control of a human test subject. Launched in Slovenia and Austria in 2009.

Re-rite
A digital residency project by the Philharmonia Orchestra in London, RE-RITE allowed members of the public to conduct, play and step inside the Philharmonia Orchestra through audio and video projections of musicians performing Stravinsky's *The Rite of Spring.*

Rettocamme Web Project

2009 project launched by Emma Cotter, open to any choreographer willing to participate in a world-wide social and artistic collaborative experiment. It is an invitation to make a short dance piece for video or re-configure an existing video using the RWP54321 formula.

Robots and Avatars

A programme of events and educational activities developed by body>data>space, designed to explore how young people will work and play with new representational forms of virtual and physical life in 10-15 years time. The platform examines the potential identity evolutions of today's younger generations within the context of a world in which divisions between virtual and physical spaces are increasingly blurred. See also the Links to Artists involved in this area of work.

Sadlers Wells Global Dance Contest 2009

Sadler's Wells in London, the world's leading venue for international dance, ran a search for new talent to perform live on stage. Entrants had to choreograph, perform and film an original piece of dance and enter it into the Global Dance Contest 2009.

The Adding Machine

Virtual performers on stage: 2007, University of Florida, USA. Actors working in real time from remote locations were beamed onto a stage where they performed with live actors. The broadband-enabled experience allowed the audience to watch a seamless, 3D performance.

The World Opera

The World Opera plans to create a distributed worldwide opera stage, based on several locations in Europe and North America (to date Tromsø, Oslo, Stockholm, Struer, Milan, Belfast, New York, San Francisco, Montreal and Banff), with full performances planned in Summer 2011. The artists, singers and musicians, are all placed in different locations on a local stage. Each stage is partly live, partly virtual and connected to all the other local stages, creating together a worldwide distributed stage making one common opera performance. See also: World Opera – bordering on the impossible

Twitter Opera

2009 participatory Twitterverse opera created for The Royal Opera House, London.

YouTube Symphony Orchestra

YouTube presents the world premiere of the Tan Dun composition "Internet Symphony, Eroica" as selected and mashed up from thousands of video submissions from around the globe. See auditions report and review by Ed Pilkington.

festivals_online/offline

amber

amber Arts and Technology Festival and amber Conference are held in Istanbul, Turkey. The primary objective is to promote the idea of an Art that is inseparable from technology and the human body.

Ars Electronica

This festival of art, technology and society was launched in Linz in 1979 to highlight the emerging Digital Revolution. It quickly developed into one of the world's foremost media art festivals, now an annual setting for artistic and scientific encounters with social and cultural phenomena that are the upshot of technological change.

AV Festival
An international festival of electronic arts, featuring visual art, music and moving image: a biennial event, the festival takes place in the urban centres of NewcastleGateshead, Sunderland and Middlesbrough in North East England.

Bains Numériques
International digital arts festival of Enghien-les-Bains, France: festival, conference on performing arts, digital arts and new technologies, competition and exhibition.

cellsbutton
Yogyakarta annual international new media art festival, Indonesia is organised by House of Natural Fiber in Java, Indonesia.

CYNETART
CYNETART has been showing new trends of cultural developments in the media arts since 1997. The festival presents projects which integrate art, science and media technology.

ElectroSmog
A new 2010 festival that revolves around the concept of Sustainable Immobility. A truly international festival with international debates and discussions, performances, art projects, exhibits, site specific projects, screenings, design competitions, and much more. However, no presenter will travel beyond their local or regional boundaries to participate. It will work in a network of cultural and new media centres, labs, theatres and other public venues to create the local 'hubs' that will inter-connect.

EMYAN – euro-med young artists network
Runs Online Arts Festival open to young artists from the region, curated and presented online.

FutureEverything
The festival formerly known as Futuresonic, takes place in Manchester, UK with world premieres of astonishing artworks, an explosive city-wide music programme, and visionary thinkers from around the world across 4 festival strands - Art, Music, Ideas and Showcase. A global conversation bringing the future into the present and exploring the interface between technology, society and culture.

ISEA - International Symposium on Electronic Art
ISEA 's membership and collaborators consists of a wide range of individuals and institutions involved in the creative, theoretical and technological aspects of electronic arts. The annual International Symposium on Electronic Art, (ISEA) is a gathering of the international art, science and technology community. ISEA 2010 will be held in the Ruhr, Germany.

Kinetica Art Fair
Held in London, it provides collectors, curators and the public with a unique opportunity to view and purchase artworks from leading contemporary arts organisations and artists specialising in kinetic, electronic, robotic, light, sound, time-based and interdisciplinary new media art.

LIFT
London International Festival of Theatre: international festival that shows and commissions work by some of the world's boldest and brightest theatre makers, including interactive cross-media performances that push the boundaries of contemporary theatre.

Mapping Festival
International visual and audio festival based in Geneva, Switzerland, set up to promote the VJ medium, its culture and its connection to electronic music. It has evolved into presenting related projects in contemporary art - audiovisual performances, interactive installations and workshops.

MIRfestival
Festival in Athens presenting: innovative, experimental artistic projects, including research on the co-existence of the performer's presence, image and media, live media projects, electronic and image projects, installations, video-installations and interactive art projects.

NewMediaFest
NewMediaFest'2010 is planned as a networked festival online and offline (physical space) starting on 1 January 2010 and running to 31 December 2010.

onedotzero
adventures in motion: new experiential festival experience based in London with some global touring which combines music, film, play, live performance, interactivity, digital arts and culture.

Share Festival
Based in Turin, Italy, SHARE is an event dedicated to the awareness and promotion of art and digital culture, developing the creativity fuelling the new expressive possibilities offered by new media and technological innovation in general.

Sobrenatural
Virtual festival cycle in which La Porta, based in Barcelona, commissions performance artists the creation of a work specifically conceived for presentation on the net.

Transmediale
 An internationally prestigious festival for contemporary art and digital culture, located in Berlin, transmediale presents artistic positions, which reflect the role of new technologies in today's society. Now in its 10th edition – 2010 theme was Futurity Now!

UMove
UMove online videodance festival, organised by Pentacle Movement Media.

places

Bandung Centre for New Media Arts
Founded in December 2001 as a response to the urge for dialogue and cooperation among multi-disciplinary fields. Works at cross-section of science, technology and art. Based in Java, Indonesia.

Centre des Arts Enghien-les-Bains
Arts centre in France focused on digital arts, new technologies and performing arts. Organiser of Les Bains Numériques festival. Lead organisation for EU Culture Programme-funded project in 2010/11 'Mobility for Digital Arts in Europe'.

Ciant
International centre for art and new technologies, located in Prague.   Partner and co-organiser in many EU funded cultural projects. Funded as an 'Ambassador' European cultural organisation in 2010.

Daniel Langlois Foundation
Based in Montreal, Canada, the Daniel Langlois Foundation for Art, Science, and Technology aims to further human knowledge by supporting artistic, scientific and technological research.

House of Natural Fiber
HONF is a New Media art laboratory, founded in 1999, and based in Yogyakarta, Indonesia. It concentrates on the principles of critique and innovation, running numerous New Media art projects and workshops. Organiser of cellsbutton festival.

Internationes Interaktionslabor – International Interaction Lab
A laboratory for interactive media, design and performance in Saarland, Germany, directed by Johannes Birringer.

Kawenga
In Montpellier, France: a place dedicated to creation, mediation, training and diffusion of digital arts.

Medialab-Prado
A programme of the Madrid City Council's Department of the Arts, aimed at the production, research, and dissemination of digital culture and of the area where art, science, technology, and society intersect.

PAF – PerformingArtsForum
A place in Northern France for the professional and not-yet professional practitioners and activists in the field of performing arts, visual art, new media and internet, theory and cultural production, who seek to research and determine their own conditions of work. Initiated and run by artists, theoreticians and practitioners, PAF is a user-created, user-innovative informal institution.

Pervasive Media Studio
Based in Bristol, UK, it brings together practitioners, researchers and users from diverse backgrounds to explore questions of how to design immersive, creative, inclusive experiences for this new form of pervasive media.

Transcultures
Multidisciplinary association based in Mons, Belgium set up to develop a Centre of electronic and sound cultures. Transcultures organises the Transnumériques festival, as well at the sound arts festival City Sonics.

V2_ Institute for the Unstable Media
An interdisciplinary centre for art and media technology in Rotterdam. V2_'s activities include organising presentations, exhibitions and workshops, research and development of artworks in its media lab, publishing in the field of art and media technology, and developing an online archive.

Virtueel Platform
The sector institute for e-culture in the Netherlands: e-culture refers to the ever-evolving relationship between information and communication technologies and the production and consumption of culture and the arts. Good publications for download.

live transmission & distribution projects

Cultu.ru
Russian festival of live transmission of theatre performances via internet. Site in Russian.

Digital Theatre
Works in partnership with leading UK theatre companies: Almeida, English Touring Theatre, Royal Shakespeare Company, Royal Court & Young Vic. Digital Theatre aims to capture live performance authentically onscreen.   Users download the software and pay for the production they want to see.

Manchester Camerata & ExNovo
In October 2009 Manchester Camerata gave a performance on a European stage without incurring air miles, without CO_2 emissions….without even leaving Manchester. A live synchronised performance by Manchester Camerata and the Venetian ensemble Ex Novo was relayed to the 2009 World Forum on the Environment in Venice, via the internet.

The Met: Live in HD
In 2010, the Metropolitan Opera, New York, is in its fourth season of live broadcasts via satellite of opera productions worldwide. The 2009-10 season offers live transmissions featuring nine performances to 41 countries outside the USA. A new educational programme: The Metropolitan Opera: HD Live in Schools has gone nationwide in the USA this season.

NTLive
The UK's National Theatre launched an initiative in 2009 to broadcast live performances of plays onto cinema screens worldwide. Broadcasts feature behind-the-scenes footage and interviews with artists.   The first production played to 73 screens in the UK (88% capacity) and to eighteen countries around the world, reaching audiences of around 50,000. See also Beyond Live NESTA report.

platforms _groups_lists_networks_blogs

2020 Network & Thin Ice project
For six European arts organisations, 2020 is a realistic date to work towards for making the changes necessary to stabilise the climate and secure a sustainable future. Activities include examining the carbon footprint of the performing arts, new ethics and approaches for international touring.

Bricolabs
A global platform to investigate the new loop of open content, software and hardware for community applications, bringing people together with new technologies and distributed connectivity, unlike the dominant focus of IT industry on security, surveillance and monopoly of information and infrastructures.

CRUMB
Curatorial Resource for Upstart Media Bliss. It aims to help those who 'exhibit' new media art, including curators, technicians and artists. Active discussion list.

Dance-Tech.net
Using the most advanced social software platforms and internet rich multimedia applications, dance-tech.net provides movement and new media artists, theorist, thinkers and technologists the possibility of sharing work, ideas and research, generating opportunities for interdisciplinary collaborative projects.

DANCERS!

Interactive video database of professional dancers of any style or technique improvising within a precise context: 2 minutes, defined space, exact lighting, chosen music. DANCERS! is a 5 year project which aims to travel to cities throughout the world and welcome dancers of all cultures to join the collective project. Project originated in Belgium with various European partners.

Dancing in Second Life

Round table convened in Second Life in 2009 to map and analyse the implications of dance and performance activity engaged with Second Life®. Discussion can be found on Dance-Tech net. See also: http://www.movement-for-account-corpses.de/

Digicult

online/offline cultural and editorial platform, created with the aim of spreading digital art and culture worldwide. Digicult focuses on the impact of new technologies and modern sciences on art, design, culture and contemporary society. It represents the first broad Italian network of journalists, curators, artists and critics in the field.

Digitalarti

International portal and community dedicated to digital art.

e-flux

International network which reaches more than 50,000 visual art professionals on a daily basis through its website, e-mail list and special projects. Its news digest – *e-flux announcements* – distributes information on some of the world's most important contemporary art exhibitions, publications and symposia.

empyre

empyre soft_skinned_space is a discussion list – an Australia-based global community. It facilitates critical perspectives on contemporary cross-disciplinary issues, practices and events in networked media by inviting key new media artists, curators, theorists, producers and others to participate in thematic discussions.

Everybodys Toolbox

A data base and library, a toolbox and game creator, a publication house, a score container, a site for distribution and for long term investigatory discussions; a platform for the development of tools and content, for research and performance, for exchange and desire. It aims through collective effort to develop the discourses that exist within the performing arts and to create a platform to widen access to this information beyond the practitioners involved.

Furtherfield

Provides platforms for creating, viewing, discussing and learning about experimental practices at the intersections of art, technology and social change.

idanca.net

Dance information exchange platform set up in Brazil to create the possibility of national and international exchange on contemporary dance. It brings together people, abilities and knowledge to make the circulation of ideas possible.

IETM
International network for contemporary performing arts: a membership organisation which exists to stimulate the quality, development and contexts of contemporary performing arts in a global environment, by initiating and facilitating professional networking and communication, the dynamic exchange of information, know-how transfer and presentations of examples of good practice.

liftconference
A series of events built around a community of pioneers who get together in Europe and Asia to explore the social implications of new technologies. Lift is an open conference whose success depends in a large part on people's contributions.

like now!
Interdisciplinary platform for new media art projects in progress. Swedish member of Upgrade! network.

MaPAD2 – Map and Program of Arts in Digital Dance
Mapping project, coordinated by the Universidade Federal da Bahia, Brazil. Catalogues Brazilian artists and researchers working with dance and technology. Lists institutions and festivals in Portuguese-speaking countries and beyond – Latin America and worldwide. Site in Portuguese.

Move the Frame
The official blog of Pentacle's Movement Media in New York, a project helping dance and media artists make dances for screen and use media to market their dance work more effectively. Move the Frame is a locus for dialogue about the form and a clearing-house of information about all things dance and media related.

Movimiento
Spanish language South American social network platform for contemporary dance makers and matters.

Networked_Performance blog
In 2004, Turbulence originated the *Networked_Performance blog*, aiming to chronicle current network-enabled practice, to obtain a wide-range of perspectives on issues and to uncover commonalities in the work. Useful definitions, fascinating archive of works, 7000 posts +

Open Frames
An open archive for performance based work. Search and post your own content.

RAN – réseau arts numériques
A digital art network of artistic, scientific and industrial research, production, distribution and training organisations in the area of digital creation in France and internationally. Launched in 2010, it offers a unique platform where art, science and industry converge, removing the barriers between these sectors and opening up a pioneering space for creation and innovation.

Resilience and Renewal
Blog created for the Theatre Forum Conference 2010 in Ireland. See debate on "interactive theatre": 'Are the rules of the game really changing as audiences become players?'

Rhizome
Dedicated to the creation, presentation, preservation, and critique of emerging artistic practices that engage technology. Open platforms for exchange and collaboration. Founded in 1996 and now located within the New Museum of Contemporary Art, New York.

Sacha Kagan: blog on arts and sustainability
Blog on the transdisciplinary field of "arts and (un-)sustainability". Author of 'Sustainability: a new frontier for the arts and cultures' (2008)

Teatron
Open community of performing arts professionals, artists (also new media-oriented) in Spain. Site in Spanish.

Theatre of With
Blog debating thoughts about 21st century theatre in the context of the current revolution, spawned by the internet and changes in the way we can communicate and organise ourselves.

Turbulence
Turbulence is a project of New Radio and Performing Arts, Inc. (NRPA), New York and has commissioned and supported net art since 1996. As networking technologies have developed wireless capabilities and become mobile, Turbulence has commissioned, exhibited, and archived the new hybrid networked art forms that have emerged.

Upgrade!
International network of gatherings concerning art, technology and culture. Active in over 30 autonomous nodes worldwide.

we make money not art
Widely followed media arts blog: "we visit art galleries, listen to conferences, cover art and design events, take a lot of pictures, interview creative people, and we document these findings in order to share them with you."

some tools
Note: this section is not intended to be comprehensive. Rather it is a collection of online tools and software contributed by interviewees and advisors to the research.

Cisco Telepresence
High end teleconferencing centre. See also Cisco Live in Second Life.

dyne
Free software including *FreeJ* (a vision mixer: a digital instrument for realtime video manipulation used in the fields of dance theatre, veejaying, medical visualisation and TV) and *dyne:bolic* (a GNU/Linux bootable operating system shaped on the needs of media activists, artists and creatives as a practical tool for multimedia production: you can manipulate and broadcast both sound and video with tools to record, edit, encode and stream).

FLOSS Manuals
A collection of free downloadable manuals about free and open source software together with the tools used to create them and the community that uses those tools. References many free and open source software tools used by artists and creative professionals.

HP Halo
High end telepresence and video conferencing solutions.

Location One
The Open Source Streaming Alliance is a network of Open Source streaming servers located on three continents (Australia, Europe, North America) that relay and exchange their streaming content through multicast channels.

Mechanical Turk
Amazon's Mechanical Turk is a marketplace for work which has been used by some artists to develop global artistic projects.

Second Life
The Internet's largest user-created, 3D virtual world community.

Upstage
Developed by Avatar Body *Collision* as a web-based venue and tool for online performance, Upstage is a visual 2D communication environment where performers are represented by avatars, speech is displayed in cartoon bubbles and spoken out loud using text-to-speech functionality. Audience can view and participate in live performance events online.

WJ-S
A software and a flexible public device for web performances allowing WJ-S (webjays, artists, web addicts and web mutants) to play live with text, sound and visual content available on line.

research and learning_ academic and more

ADaPT: the Association for Dance and Performance Telematics
An interdisciplinary association of artists, technologists and scholars from five educational institutions in the USA dedicated to research and critical dialogue on performance and media in telematic space. ADaPT developed into an international inter-university research group with members in USA, Japan, UK, Netherlands and Brazil.

AmbITion
UK initiative to help arts organisations achieve their 21st century sustainability ambitions through implementing integrated IT and digital developments.

The Connectivity Archive
The shinkansen Collection spans fifteen years in the performing arts from 1989 – 2004. shinkansen developed a unique niche within the British and International arts sector through facilitating connectivity between dance, performance, music, video and digital technologies. An online database and a permanent collection of recordings in the British Library media collection.

Critical Correspondence
Critical Correspondence is an artist-driven project of Movement Research in New York. It aims to activate, develop and increase the visibility of critical discourse on dance and movement-based performance work.

Digital Performance Archive
The Digital Performance Archive (DPA) traces the rapid developments which combine performance activity with new digital technologies - from live theatre and dance productions that incorporate digital projections, to performances taking place on the computer-screen via webcasts and interactive virtual environments. Research project of UK universities Nottingham Trent & Salford.

Digital Resources for the Humanities and Arts
Brunel University, London 2010 conference on 'Sensual Technologies: Collaborative Practices of Interdisciplinarity'. The conference's overall theme is the exploration of the collaborative relationship between the body and sensual/sensing technologies across various disciplines. In this respect it will offer an interrogation of practices that are indebted to the innovative exchange between the sensual, visceral and new technologies.

ETUDE: European Electronic Theatre in Virtual Dramatic Environments
EU project aiming to stimulate new creative formats through combining real and virtual actors in mixed dramatic environments. It produced a series of multimedia performances: performances using scenarios for real-time electronic theatre presented in Prague, London & Cologne.

European Future Internet Portal
The European Future Internet Portal serves as the central forum for European activities and discussions on the future of the Internet. Itl provides an overview on European research projects in the Future Internet area as well as information on important events and other news.

institute of network cultures
A media research centre that actively contributes to the field of network cultures through research, events, publications and online dialogue. Founded by media theorist Geert Lovink and located at the Institute of Interactive Media at the Amsterdam University of Applied Sciences.

Institute for Humane Studies and Intelligent Sciences
The Center for the Arts and Technologies at IHSIS is devoted to the interface and cross-fertilization between the Arts - including Dance, Performance, Music and Fine Arts - and advanced technologies.

Marcel
Multimedia Art Research Centres and Electronic Laboratories, MARCEL is a permanent high bandwidth interactive network and web site dedicated to artistic, educational and cultural experimentation, exchange between art and science and collaboration between art and industry.

The Mixed Reality Lab
Based at the University of Nottingham, UK, it is a dedicated studio facility where computer scientists, psychologists, sociologists, engineers, architects and artists collaborate to explore the potential of ubiquitous, mobile and mixed reality technologies to shape everyday life.

Movement Research
One of the world's leading laboratories for the investigation of dance and movement-based forms. Based in New York.

Performance Research Group & New Performance Paradigms
Research group (Salford University, UK) on multimedia and new media performance modes including digital performance, site specific, networked performance and dance and screen. New Performance Paradigms is an international network of theorists and practitioners in contemporary performance practice focused on research and exploration into new modes of performance in the 21st Century.

Planetary Collegium
International Research Conference - 2009 theme of 'Consciousness Reframed: art and consciousness in the post-biological era'.

ResCen
Centre for Research into Creation in the Performing Arts at Middlesex University, London. Hosts some interesting artistic projects and researchers focused on new technologies and dance/performance.

Screendance Network
Since early 20th century, dance and moving image artists have been developing a hybrid practice, now referred to as Screendance. The first international Screendance Network of US and UK based researchers, scholars and practitioners, was established to develop a deeper understanding of the complexity and potential of this emergent hybrid practice.   Based at Brighton University, UK.

Sensing Presence Research
Research project of the Waag Society in Amsterdam, led by Sher Doruff and Floor van Spaendonck; it ran from 2000 – 2005 (?) and sought to foster and define the art of creative, collaborative process in new media performance.

Shift Happens: ALT Shift
Annual conference on Arts/Learning/Technology organised by Pilot Theatre in the UK, a theatre company committed to using technology to extend how they connect and communicate with their audiences. The conference is an opportunity to explore and share with others how to make the most of new technology opportunities.

Symposium on Arts and Technology
2004 conference on the "Arts of the Virtual: Poetic Enquiries in Time, Space and Motion" held at University of Utah, USA. Presentations, performances, workshops and discussions by some of the leading artists working in the hybrid spaces between dance, music, architecture, performance, visual arts, and technology – useful research resource.

reading

Adventures in Cyberformance: experiments at the interface of theatre and the internet
Downloadable MA thesis of Helen Varley Jamieson, 2008. It examines the new theatrical form of cyberformance (live performance by remote players using internet technologies) and contextualises it within the broader fields of networked performance, digital performance and theatre.

Beyond Live
2010 in-depth research study by NESTA (UK National Endowment for Science, Technology and the Arts) on two National Theatre Live pilot theatre productions broadcast in 2009 to cinemas in the UK and worldwide. The research shows how this innovation has allowed the NT to reach new audiences for theatre, not least by drawing on established relationships between cinemas and their patrons all over the country.   Interesting marketing and audience survey data on streaming live theatre.

[Collaborative Futures](#)
Written by six authors in five days, as an experimental and thematic Book Sprint, an intensive and innovative methodology for the rapid development of books, hosted by transmediale and FLOSS Manuals.   On the theme of collaboration and new technologies. Download or buy the book.

[Die Welt als virtuelles Environment (The World as a Virtual Environment)](#)
This collection of essays approaches the profession and origins of cybernetics globally, highlighting risks and opportunities, particularly of networked virtual communication and action spaces. It confronts the question of whether and how the telematics "revolution" might lead to radical cultural change. Chapter on 'Virtual Physical Bodies – Serious Play' by Ghislaine Boddington on performance telematics. Commissioned & published by 2007 CYNETart festival.

[Digital Culture: The Changing Dynamics](#)
2008 publication from the Institute for International Relations/Culturelink, edited by Aleksandra Uzelac and Biserka Cvjeticanin. Explores new realities, new policies for digital culture with contributions from observers, researchers and activists from around the world.

[Digital Performance](#)
2007 book by Steve Dixon: a comprehensive survey of the history of new media in relation to theatre, dance, performance art and installation. Steve Dixon presents a detailed account of key practitioners and performances and analyses the theoretical, artistic and technological contexts of this form of new media art. Publ. MIT Press.

[FLOSS Manuals](#)
A collection of free downloadable manuals about free and open source software together with the tools used to create them and the community that uses those tools.

[From Weak Ties to Organized Networks](#)
The Institute of Network Cultures brought 12 networks to Amsterdam for a week of getting things done. Aim of Winter Camp was to connect the virtual with the real in order to find out how distributed social networks can collaborate more effectively. This is the report.

[Intercultural Dialogue and Digital Culture](#)
Conference reader for 2008 round table organised by Culturelink in Zagreb. The event aimed to discuss and share knowledge about the possibilities that digital culture provide for intercultural dialogue and to identify good practices that allow for participation of users in virtual cultural projects

[Interfaces of Performance](#)
Edited by Janis Jefferies, Goldsmiths, Maria Chatzichristodoulou, & Rachel Zerihan, publ. November 2009. Collection of essays and interviews investigating current practices that expand our understanding and experience of performance through the use of state-of-the-art technologies. Leading practitioners, writers and curators explore intersections between theatre, performance and digital technologies, challenging expectations and furthering discourse across the disciplines.

[Mini Summit on New Media Arts Practice & Policy](#)
Organised in Singapore in 2008 by ASEF – Asia-Europe Foundation and IFACCA, in partnership with ISEA2008, bringing together 54 artists, researchers and policy makers from 26 countries to develop an overview of the key issues impacting on new media arts practice and to create a policy framework and some key recommendations for action. [Download report](#).

Mission 2.0 – advice for arts and cultural organisations from the social web
2008 report by Rohan Gunatillake for MMM (mission models money) Designing for Transition.

Mute
Magazine on culture and politics after the net. Submit your content and read online.

networked – a (networked_book) about (networked_art)
Turbulence presents a networked book - written, edited and read in a networked environment – on networked art. Aims to critically and creatively rethink how networked art is categorised, analysed, legitimised — and by whom — as norms of authority, trust, authenticity and legitimacy evolve.

neural
Print magazine and website on media art, hacktivism and emusic.

On the brink of a new chapter: Arts in the 21st Century
Keynote speech by Ben Cameron, Program Director at the Doris Duke Charitable Foundation in USA, at the Australia Council 2009 Arts Marketing Summit focussing on challenges and potential for arts marketing professionals to fully embrace new technologies and social networking.

On the Couch – Capturing Audience Experience
Study of Paul Sermon's *Telematic Vision* by Rolf Wolfensberger on preservation strategies for electronic media artworks.

Shift Happens
Transcript of 2009 presentation by Mark Ball, Artistic Director of LIFT, in Perth, Australia on digital technology trends and how they are transforming audiences, theatre, arts participation and consumption patterns and expectations.

The Art of With
2009 essay by Charles Leadbeater asking: What do the advent of the web, collaborative practice and open source ways of working mean for the arts and art organisations? How do artists, audiences and other stakeholders really get involved with programming and evaluating arts venues? What does it mean for curators, programmers and traditional structures of arts organisations?

The Internet of Things
Rob van Kranenburg for the Institute of Network Cultures.   Looks at the near invisible network of radio frequency identification tags (RFID) now being deployed on almost every type of consumer item. These tiny, traceable chips, which can be scanned wirelessly, are capable of being connected to the internet in an instant. This so-called 'ambient intelligence' promises to create a global network of physical objects every bit as pervasive and ubiquitous as the worldwide web itself.

Performance,Technology and Science
Johannes Birringer. Publ. 2008 by PAJ Publications/New York. This work explores convergences between performance and science through an investigation of new technologies that drive computer-mediated, interactive art. Traces the evolution of digital performance within a particular history of engineering and theatre, now including a wide range of practices in dance, design, architecture, fashion, games, music, robotics, telematic performance & "post-production" theatre.

[Telematic Embrace: Visionary Theories of Art, Technology, and Consciousness](#)
Roy Ascott, Edward A. Shanken (ed.), publ. 2007 by University of California Press. Long before e-mail and the Internet permeated society, Roy Ascott, a pioneering British artist and theorist, coined the term "telematic art" to describe the use of online computer networks as an artistic medium. In *Telematic Embrace* Edward A. Shanken gathers, for the first time, an impressive compilation of more than three decades of Ascott's philosophies on aesthetics, interactivity, and the sense of self and community in the telematic world of cyberspace.

[Video Republic](#)
2008 publication by Demos, UK. It charts the rise of the 'Video Republic' across Europe, a new space for debate and expression dominated by young people.

[Virtual / Physical Bodies](#)
Publ. Centre des Arts of Enghien-les-Bains for the 2008/09 Virtual / Physical Bodies exhibition: texts by artists, researchers, designers are collected to enlighten the thoughts and processes of the London-based collective body>data>space - on creation processes for emerging digital territories and work with the expanding integration between human body, technology and architectural space.

[Virtueel Platform report: Matt Adams, Blast Theory, DISH preconference workshop](#)
2009 VP workshop by Matt Adams, Blast Theory: combining online games, wireless networks and virtual worlds, Blast Theory's art and research interactive projects have been created for gallery, street and television spaces. Recent work has centred on new uses for location aware technologies in public spaces, creating non-commercial content by means of already present technologies.

vm_glossary

A starting point for definitions of terms you may not have come across. Thanks to the ubiquitous wikipedia for many of these definitions – some of which will have changed by the time you read them. Incorporated into this vm_glossary is ***The Weave – a Glossary of specialised terms for performance / technology process and production*** by Ghislaine Boddington for ResCen, originally published as part of the shinkansen collection at www.connectivity.org.uk/connectivity/home.html

Access Grid technology – Access Grid ^{tm} videoconference software is generally only accessible in the academic and business environments but some artists have been using this to develop work: e.g. Another Language. See also artgrid - an informal consortium of sites based in the USA on Internet2 that utilize the Access Grid as an art medium.

Audio stream – see http://en.wikipedia.org/wiki/Audio_stream

Augmented reality – the overlaying of technology applications in to real life situations OR utilising mobile devices to integrate technology applications with real life situations.

Cinedance – see videodance

Collaborative video performance – http://www.n3krozoft.com/projects/art/aether9/index.html

Connectivity – a networking concept linking diverse ideas, processes, people and products into a community which gives and receives from each source or node on the network and which generates multiple links for the benefit of professional development, employment and audience development.

Creative User – a concept at the heart of the development of interactivity in performance work in which the user/public/audience is required to influence, activate or create the artistic experience. (definition by shinkansen - http://www.connectivity.org.uk/creativeuser.html)

Crowdsourcing – outsourcing work or decision-making to a group of people or community, through an "open call" to a large group of people, often through social networks. A shorthand way of describing the trend of leveraging the mass collaboration enabled by Web 2.0 technologies.

Cyberformance – term used by Helen Varley Jamieson of Avatar Body Collision to describe 'live performance by remote players using the internet to come together in real time, for an audience that may be online and/or in a proximal space'

Cyberperformance – mainly means screen dance and networked performance http://suzonfuks.net/tag/cyberperformance/

Distributed performance – see networked performance

Fake Telematics (see also Telematics) – the transmission of audiovisual data between different spaces in adjacent locations through cabling. (definition by shinkansen - www.connectivity.org.uk/connectivity/home.html)

Immersive Environments - an encompassing term to define events / spaces that create a feeling of immersion for the whole body with a variety of data, often enabling sonification and visualisation results created by the participants body through motion, touch or other interfaces.

Interaction – the relationship between the artist and the media/content and between the user/audience and the media/content which reflects a two-way exchange and involvement in creation, participation and consumption.

Interactive Installation – a form of work which requires the user to activate, create or influence the artistic experience.

Interauthorship – a creation process where each individual involved in the process makes a creative contribution as an equal member of a group and shares ownership (in terms of Intellectual property rights and copyright) of the final product with all other creators.
(definition by shinkansen - http://www.connectivity.org.uk/connectivity/home.html)

Internet 2 & Internet 3– Internet 2 is an advanced networking consortium, led by the research and academic community, using advanced technology and high-capacity secure data circuits http://en.wikipedia.org/wiki/Internet2 . Internet 3 or Web 3.0 refers to the 'semantic web' - for a technical explanation, see: http://en.wikipedia.org/wiki/Semantic_Web. For a simpler, 'plain English' explanation of how it might work for users, see: http://www.labnol.org/internet/web-3-concepts-explained/8908/ and http://computer.howstuffworks.com/web-30.htm

IRC – internet relay chat: a form of real-time internet text messaging (chat) or synchronous conferencing.

IRL – 'In real life': see **real life**

Kinodance – see videodance

Location based technologies – technologies such as wifi and GPS (global positioning system) that are embedded in mobile devices providing the ability for the device to be aware of its geographical position.

Live streaming– method of sending audio and video files over the Internet so that the user can view the file while it is being transferred.

Machinima – the use of real-time three-dimensional (3-D) graphics rendering engines to generate computer animation. http://en.wikipedia.org/wiki/Machinima

Mixed reality – the mixing of virtual and physical in performance environments.

Motion capture – a technological tool used by dancers to enable the capture of live motion and its transfer into digital data for use in a variety of ways. Some examples of this are the creation of virtual bodies and digital dancing processes, for example the creation of animated avatars, based on the real movements of a dancer and which can move and react.

MUVE – online, multi-user virtual environments, sometimes called virtual worlds. Online Multi-User Virtual Environments such as Second Life.

Networked performance – 'real-time, embodied practice within digital environments and networks; it is, *embodied transmission'* (Turbulence definition)
Examples: http://www.turbulence.org/blog/archives/cat_distributed_performance.html
'any live event that is network enabled… any form of networking in which computational devices speak to each other and create a feedback loop' and 'experienced at the moment of creation or reception' (Helen Varley Jamieson definition)
See also: http://suzonfuks.net/category/2-networked_performance/

Nick – shorthand for nickname (in online environment)

Online audience – people viewing and/or interacting with a performance that may be located anywhere in the world, in a variety of situations outside the control and knowledge of the performers

Online virtual environment – an environment which lives in cyberspace where the media content is digital and accessible via the internet.

Performance telematics – the transmission of audio-visual data between different spaces in remove locations through use of the internet.

Proximal audience – people gathered in the same physical location for a performance

Real life – also **IRL** (=in real life, i.e. not on the internet); in an online setting, "real life" refers to life in the real world, in contrast to an environment seen as fiction or fantasy, such as virtual reality, dreams, novels or films.

Realtime – at the same time as a performance is happening; synchronous connection

Remote – anywhere else (e.g. remote venues); can be near or on the other side of the world.

Responsive Environment – the creation of space which responds and reacts to data inputs, for example, the human body, sound, movement and visual information.

Screendance – see videodance

Second Life – 3D virtual environment (also known as SL). New terrain for choreography and mixed virtual-physical performance.

Telematics – the convergence of telecommunications networks with computers - the science of sending, receiving and storing information via telecommunication devices (Wikipedia).
The transmission of audio-visual data between different spaces in remote locations through use of the internet. Performance telematics remotely connects two or more 'stages' and performance pieces are performed live in each space and simultaneously mixed and transmitted to the web. (definition by shinkansen - http://www.connectivity.org.uk/connectivity/home.html and http://www.bodydataspace.net/what-we-do/telematics/)

Telematic art – describes art projects using computer mediated telecommunications networks as their medium (Wikipedia) http://en.wikipedia.org/wiki/Telematic_art

Telecollaborative arts – See: http://www.ecafe.com/getty/SA/index.html

Telepresence – presence in real time, or almost real, mediated by technology (definition of corpos informáticos research group) http://www.corpos.org/papers/perfotele.html

Theremin – an early electronic musical instrument controlled without contact from the player. See Wikipedia: http://en.wikipedia.org/wiki/Theremin

Time lag – delay between the sending/transmission of data (image, sound, text) and its arrival at a remote location; used to be up to 7 seconds, now barely perceptible.

Translocal – describes the idea of a 'global village' or networked society - a community that is beyond the local - connected globally through the internet and other social networking platforms.

Ubiquitous computing – the integration of interactive technologies into everyday objects and surroundings so that technology becomes 'invisible' or ubiquitous. See also Pervasive Media and The Internet of Things.

Very high bandwidth networks – refers to Internet 2 and 3, generally the academic research network functioning over connections anywhere from 50 megas to 1 giga per second

Videodance – a hybrid of dance and media arts, also known as dance film, cinedance, screendance, and kinodance (definition by Move the Frame)

Vimeo – "a respectful community of creative people who are passionate about sharing the videos they make"; widely used by artists involved in dance & networked performance. http://vimeo.com/

Virtual Physical Bodies – the blurring boundary between the virtual and the physical which refers to the creation, communication and interaction of real bodies and digital representations of the body. (definition by bodydataspace - http://www.bodydataspace.net/projects/completed/virtual-physical-bodies/)

VRML – is a standard file format for representing 3-dimensional (3D) interactive vector graphics, designed particularly with the World Wide Web in mind. Virtual Reality Modelling Language

Wearable computing – computer systems that can be worn on the body to enable connectivity of the human body to computer networks. Wireless applications enable the body to move freely and avoid the restrictions of cables and wires. Equipment can gather data and signals generated by the wearer or other wearers connected to the same system and communicate as a network of data and information, e.g. sensing and movement data.

Web performance – performance which is transmitted over the internet and viewed online

Webinar – a seminar broadcasted over the Internet through video streaming

annex: On-the-Move research into Virtual Mobility: online survey results

On-the-move.org launched a new research mission in 2009 to sample the fast evolving environment of virtual mobility in the contemporary performing arts. The project aims to map the key drivers now pushing and pulling artists, cultural producers, promoters and movers to collaborate, share, make, present and innovate using virtual mobility. It will examine the interface between online and offline collaboration and mobility and present the voices of key thinkers and practitioners.

It aims to find out:

- What is going on
- Why are people working in this way
- Where are the hotspots
- Who are the key players

To kick off the research, an online survey was announced on On-the-Move on July 31st and remained open until October 10th. The survey call was picked up and circulated to artists and culture professionals through other platforms, notably:

Dance-Tech net: www.dance-tech.net
**Culture 360**: www.culture360.org
LabforCulture: http://www.labforculture.org/en/moderators/cristina-farinha/blog/52737
Kulturkontakt Austria: http://www.cee-culture.info
Interarts – Cyberkaris newsletter: http://www.interarts.net/newsletter/index.php?p=30&idioma=3

Survey results
185 people responded to the survey.

1. **Profile of respondents:** 65% individuals and 35% organisations.

Your profile:
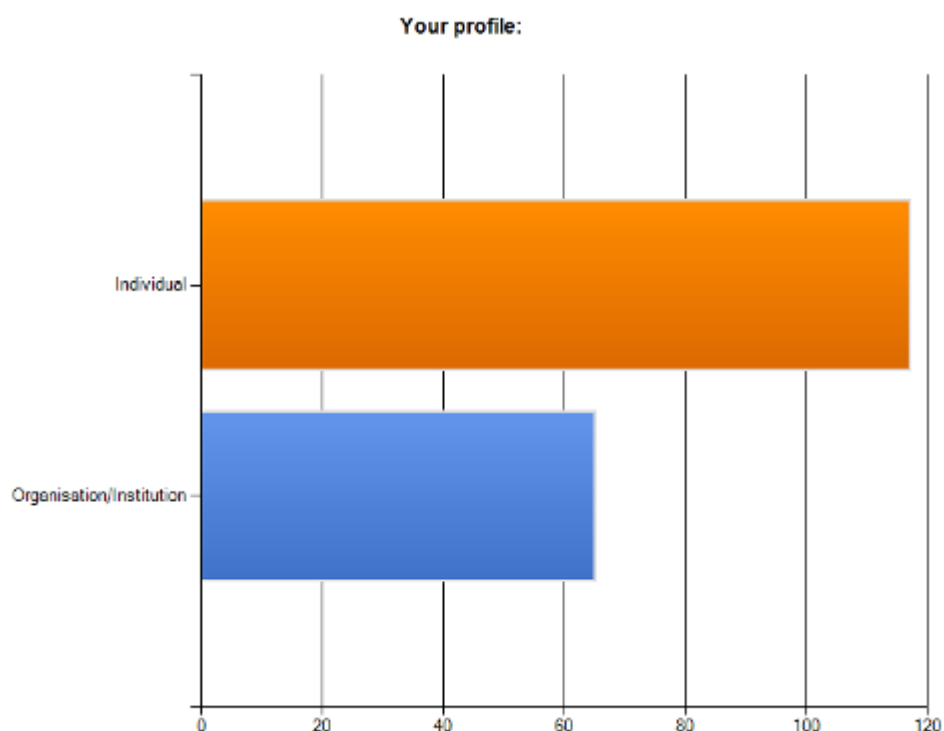
Individuals largely described themselves as **artists** (76%) and **arts management** (24%). Some had several identities. Other professional fields described: researcher, critic, teaching professions (teacher, instructor, professor, trainer), programmer, technician, scenographer.

**For INDIVIDUALS - what is your professional field:**
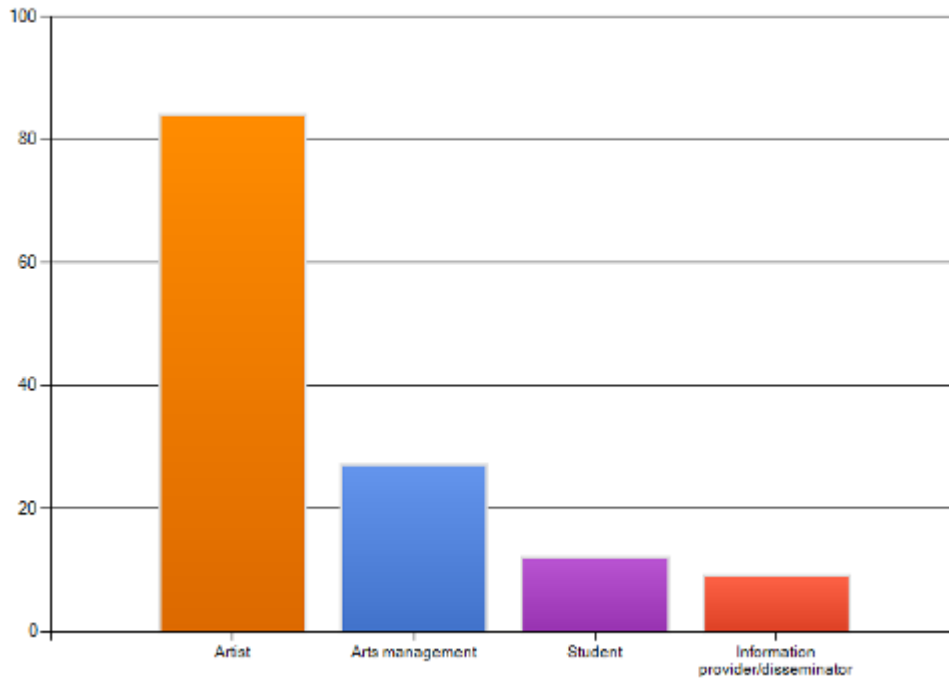
Organisations that responded were more mixed in type, the majority being **artistic companies** (43%). Some 20-25% were education establishment, promoter/producer, festival and/or network.

For ORGANISATIONS/INSTITUTIONS - what type of organisation are you?
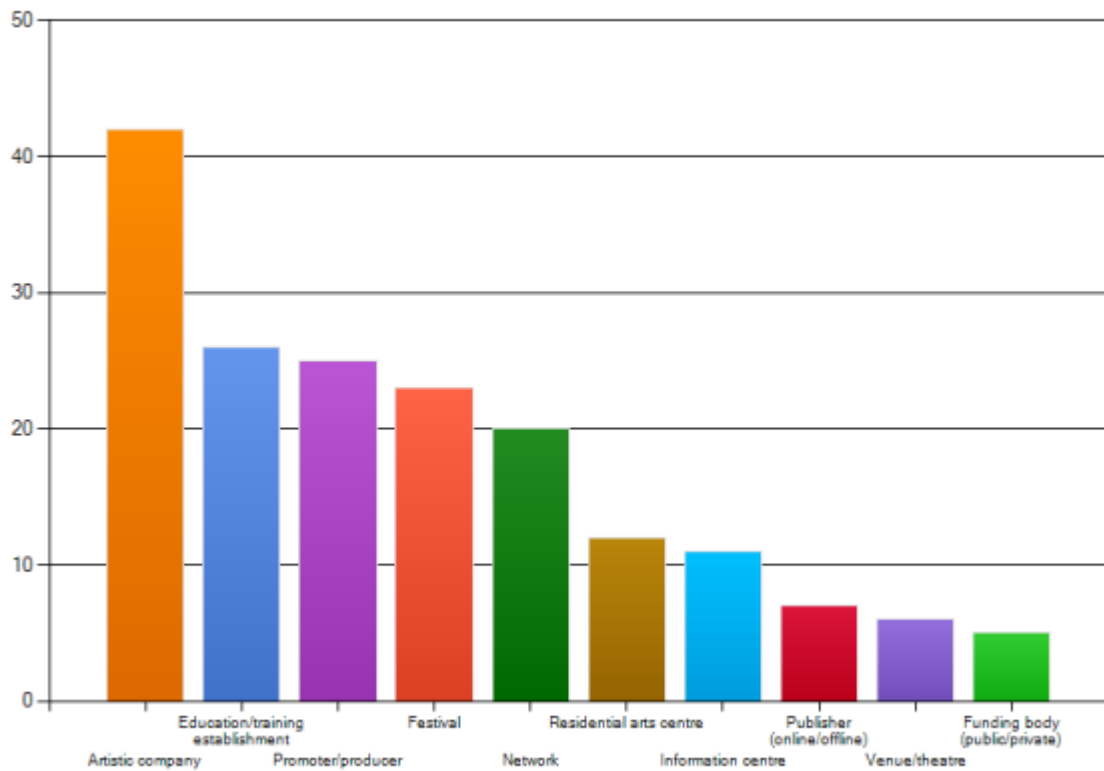
2. **Artistic disciplines:** in line with the performing arts theme of the research, the large majority of respondents identified themselves within **dance** (50%), **interdisciplinary** (44%) and/or **theatre** (37%) arts practices. Many chose more than one artistic discipline.

Your artistic discipline/s:
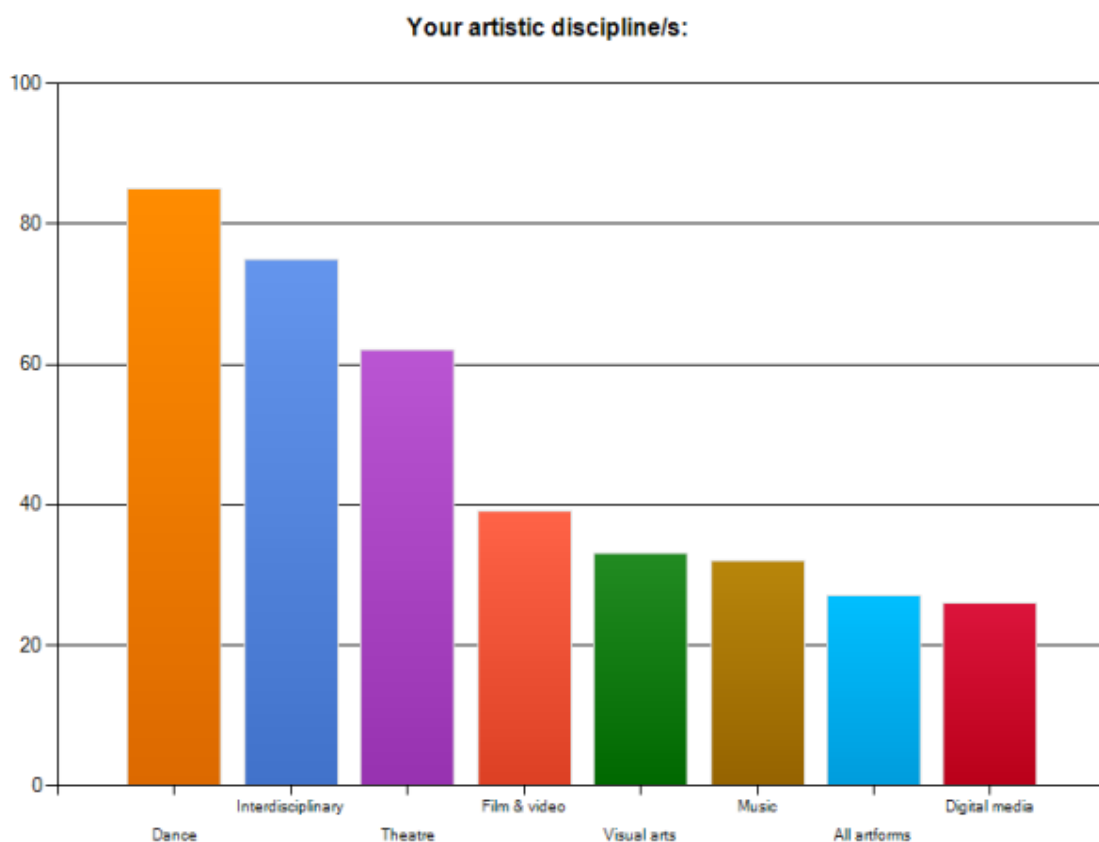
3. The survey found **73% VERY INTERESTED** and **25% QUITE INTERESTED** in OTM's investigation into virtual mobility in the performing arts

4. Respondents identified their level of technical knowledge in the subject as:
   73%   Medium
   19%   Very high
   8%   Don't know very much

   They were then asked to comment on the appropriate level of technical language to be used in the report and what would make the subject most useful and accessible to them. This elicited lots of advice. Some comments contradicted each other: a small number wanted a high level of technical language, very many more wanted a low level of technical language. some others made suggestions for providing a report suitable for a mixed readership. Comments include:

   o   *Level of technical language shouldn't be very high*

   o   *Try to avoid acronyms and jargon*

   o   *An intermediate level of technical language with glossary would be most useful.*

o *it might be worth considering a different version for experts and professionals who have been working in the field for some time and for those who are just beginning their career or just about to get interested.*

o *less technical language; good amount of visual representation whenever possible; straightforward (non-jargon) writing*

o *An idea would be to have a generally-agreed-to glossary of terms at the front of the text, as well as links to sites which would make it clear what the terms used are referring to or using as reference bases*

o *Online; downloadable PDF; if there is a possibility to send a printed copy for free, then yes*

o *the more practical, the better*

o *I would like to see a report that illustrates in accessible and engaging ways, contemporary trends and tools in virtual connectivity - with a look also at the future so that one can start envisioning ahead, new ways of working with internet and other media.*

o *personal testimonies of professionals; what mobility experiences brought them, gave them*

o *Keep it simple - Quick to access - Low graphics - Good links*

o *Languages requested: Spanish, French & Plain English; option for wiki system to switch into as much languages as the users would need.*

5. The survey asked what were the most important ISSUES and MOTIVATIONS for people to work on virtual mobility (offering various options). Main results were that respondents are:
   - **VERY INTERESTED** (88%) in **Artistic Creativity**
   - **VERY INTERESTED** (75%) in **Intercultural Dialogue**
   - **VERY INTERESTED** (64%) in **Financial issues**
   - **VERY INTERESTED** (62%) in **New audiences**
   - **VERY INTERESTED** (62%) in **Social networking**
   - **Equally VERY and QUITE INTERESTED** (44%) in **Copyright issues**
   - **QUITE INTERESTED** (50%) in **declining relevance of traditional media**

   Other issues and motivations which were mentioned include:
   - New hybrid formats of performance
   - Human/Machine interface
   - Legal issues (tax and work permits)
   - Funding (availability, policy, corruption issues) + Viable income streams in new media
   - Focus on truly exciting, artistic and relevant creative projects NOT fear and declining audiences
   - Impact of contact with virtual forms of arts and culture into social dynamics and audiences in physical reality
   - International distribution of cultural projects
   - Creation of specialized critics for performances / works online
   - Social responsibility of arts
   - Online collaborative projects

OTM's investigation into virtual mobility will look at important ISSUES and MOTIVATIONS for people working in this way. How interested are you in learning about any of the following:
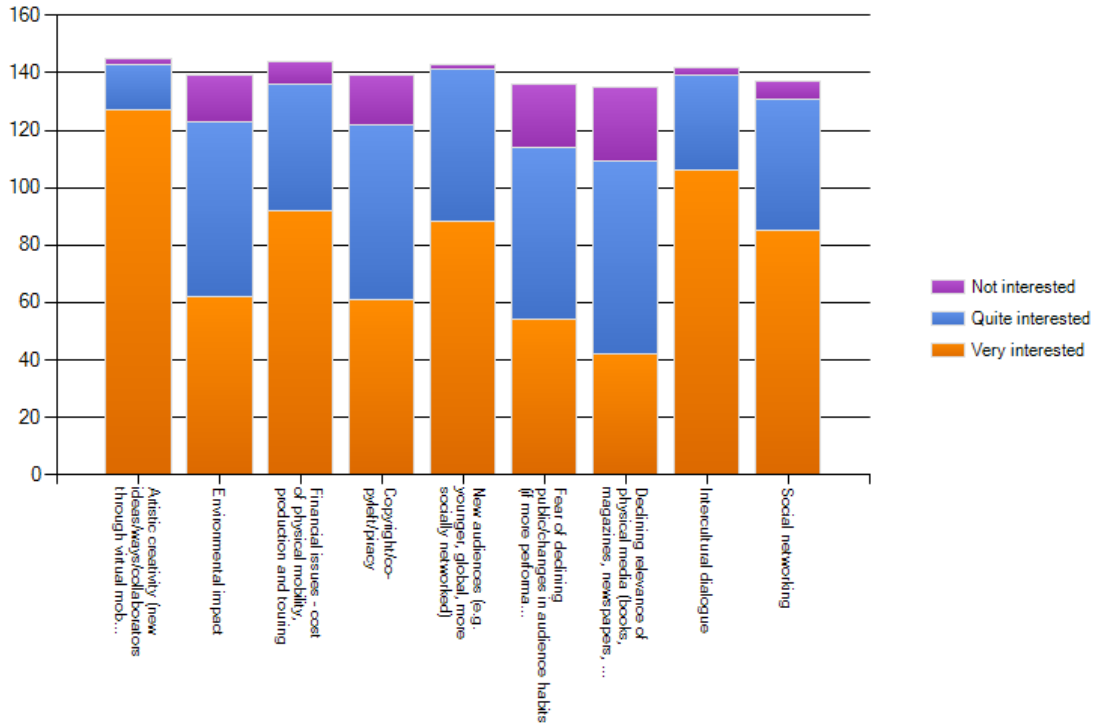
6. Use of online communication and social networking tools:

Do you regularly use any of the following online communication and social networking tools:
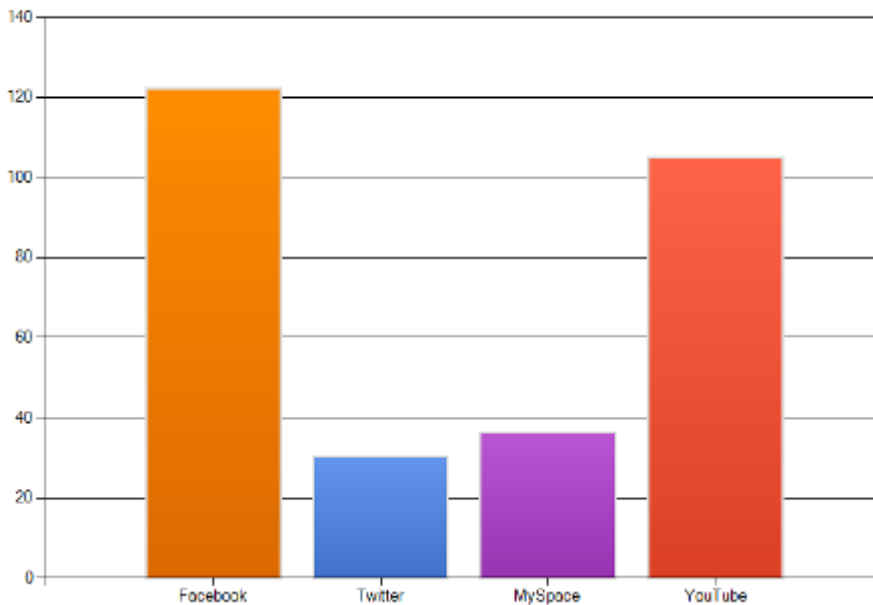
85% of respondents regularly use Facebook.
73% regularly use YouTube.
Other communication and social networking tools which were mentioned include:
Dance-tech.net, Vimeo, Flickr, Rhiz, Blogger, LinkedIn, Orkut, Xing, Wordpress, Viadeo, Skype, Gmail, Blogspot, Movimiento, Draugiem, Wikipedia, Yahoo

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7. Respondents were asked to suggest contacts and potential interviewees for the study. There was a strong response to this question. Sixty people suggested around 150 contacts and recommendations.
    This indicates the high level of interest in this subject. The suggestions and contacts provide a considerable amount of research material, will inform the choice of case studies and interviewees for the report and may indeed provide resources for further investigation in the future into this subject.

8. 120 people (65%) of respondents gave their contact details and an email list has been compiled for further mailings on the research.