

4.2. 3DNovations

Project	3DNovations
Organisation	Hao2.eu (pronounced 'how to')
Research location	Surbiton, United Kingdom
Cooperation partners	Various industrial, public sector and education partners; Kingston University & University College Dublin, Autus (foundation for people with autism set up by Hao2.eu) and most recently, i-deas.ie – a social business Hao2.eu has set up in Ireland as part of its EU growth strategy
Team	One founder/director, one R&D tech, one quality/ops – supporting pool of 20 freelancers (80% of the members have autism/disabilities)
Funding sources	Through service delivery and donations
Websites	http://www.hao2.eu http://www.autus.org.uk

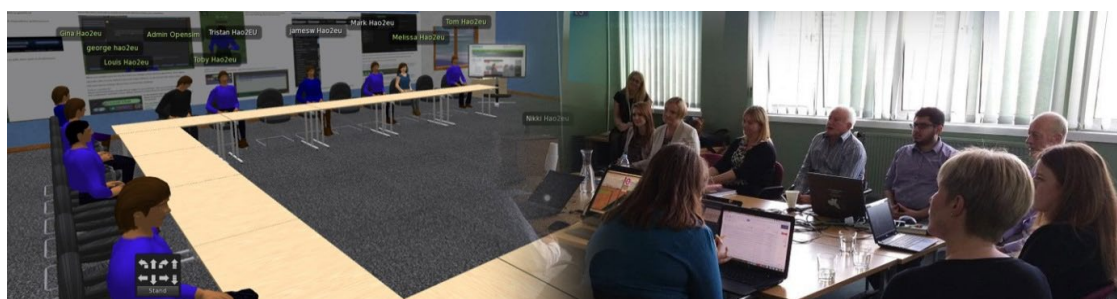
ORGANISATIONAL BACKGROUND ●●●

3DNovations is the brand under which the social business Hao2 conducts research, initiates co-designs and commercialises 3D environments, develops platforms and cloud services. These activities enable people with autism and other complex needs to create and access support services, vocational training and work related opportunities that better meet their needs and demands. The functional driver behind this is the 3DNovations platform and 3D Cloud services which represents a 3D digital environment.

The 3D environments are accessed using avatars (similar to gaming technology), to reduce barriers to engagement and participation and enable people with autism and complex needs to have an active role and influence in research design and delivery in a way that would not be possible otherwise. There is a body of academic work that collated the positive effects of using 3D virtual world technology as an assistive technology / learning tool by people with autism and other communication disabilities.

FUNDING ●●●

This company is not the result of an official university research programme, but originated from Herbertson's own initiative starting as an entrepreneur. It was also related to personal experiences with autism (son) and unemployment (self). Some of its income has come from grant-based funding from a variety of different sources but it primarily aims to generate income by charging organisations and partners for its technology services and in doing so creates training and employment opportunities for people with autism both within the company and in the organisations purchasing its services. The fees Hao2.eu receives for its services from these organisations and partners are invested in research and development to cover salaries and operational costs and used to commission services from or make donations to Autus – the Hao2.eu Foundation. Hao2.eu's business objective is to lead the technology industry by example by showing it can be a successful, highly competitive, innovative and sustainable social business that reinvests its profits in improving outcomes for people with autism in the UK, EU, the Commonwealth and China.



PROBLEM BEING ADDRESSED ●●●

People with autism now represent around 1% of the UK population (equal to about 700,000 people, meaning that the lives of around 2.7 million people are touched by autism). Around 70% of autistic people believe that they do not receive enough support or effective support from social services; only 15% of adults with autism in the UK are in full-time paid employment and only 10% of them receive employment support, even though 53% say they want it. In addition, between 44% and 52% of autistic people also have a learning disability. This shows the urgent need to provide better employability and employment services targeting this specific group of citizens. The objectives for the project are threefold:

- To demonstrate the potential of online 3D environments accessed using avatars to enable people with autism and complex needs to lead as well as participate in designing and delivering research and development that can deliver sustainable and scalable social and economic benefits and outcomes.
- To influence social and cultural change by research and developing 3D cloud platforms and services as responsible research and innovation tools that organisations of all kinds can use to make their services more accessible and inclusive for people with diverse needs.
- To improve employability prospects and outcomes for people with complex conditions such as autism by enabling them to access relevant services and training in a way that better meets their needs.

RESEARCH DESIGN AND SOLUTION ●●●

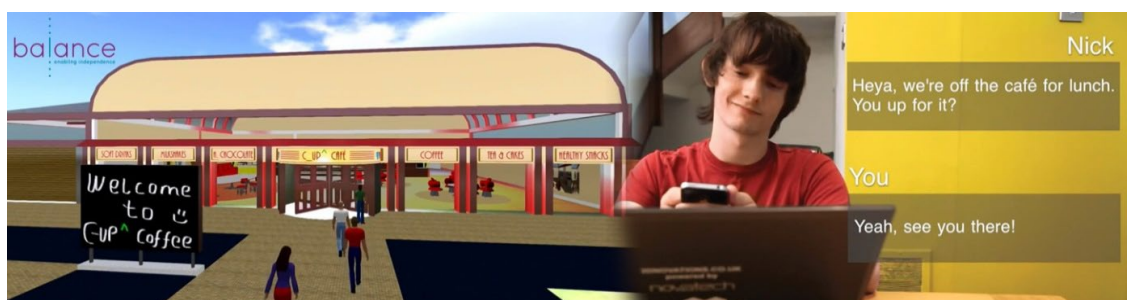
The relevance and potential of the platform was explored through good case studies, including many stakeholders and by providing examples. During the next phase, the focus is on further growth and professionalisation. Very practical barriers to growth are identified, including the readiness of the technology market (people don't know they could have a use for the Hao2 innovation, 3D virtual reality; but also after the economic crisis), and access to finance and support for people who don't have the networks and networking skills, such as people with autism.

Currently there are ten 'hubs' (locations based in various communities) around the country which are helping employees with training on how to use the 3D system and how to train people with autism. These people are able to help people with autism afterwards. The project is still in the start-up phase at present and these external hubs usually receive start-up funding; when the funding ends they continue to operate through volunteer support but with more limited capacity.

GRAND CHALLENGE BEING ADDRESSED ●●●

The societal challenge addressed in this initiative relates to inclusion and social justice: there is a gap between what people with autism have access to vs. what others have access to. Tackling exclusion (e.g. from school, from employment), having a voice, having an influence, having a job and contributing to society is what this project aims to contribute.

Providing support to people with autism can be done at a lower cost, saving money for society, through prevention of current exclusion of people with autism. There is an annual cost of £38 billion annually in the UK that results from 'failing' (as Herbertson puts it) autism citizens who have potential especially when assisted by technology. There is a pool of 600,000 people who may have potential digital skills to fill this gap. There may also potentially be a deficit of skilled workers within the UK in the near future. This tool may help to remedy that. In addition to addressing an existing social need, the research is engaging end-users in the creation and evaluation of services, whilst helping traditional public employment service providers to reach a group that is traditionally very hard to access in a cost-effective way.



RESPONSIBLE RESEARCH AND INNOVATION ●●●

The target group and audience of young people with autism and other complex needs is fully and directly involved in the research project. The rationale for including them is that people with autism are best placed to communicate their needs and are completely capable of doing so. The research project itself facilitates their involvement because it uses a technology that they are familiar with already through gaming. This is used to effectively engage them in activities such as training and development in which they would normally not participate and gain their feedback, thoughts and ideas on how to create services that meet their needs better. The substantial use of ICTs taking place outside of the recognised institutional setting is radically modifying the existing mechanisms of service provision, allowing autistic people to gain employability, social skills and engage with other parties in a completely new way. The partnership approach in the delivery of this project has meant that stakeholders such as funders, public services, voluntary sector organisations and employers have been able to engage and communicate their needs directly with the target group using a method that does not intimidate but empowers those for whom the research is intended.



The 3DNovations research project communicates with, absorbs information from and gives feedback to target groups, audiences and stakeholders in real time, openly and transparently, using a range of different approaches in various ways.

- By visiting organisations and participating in face to face meetings, in a one to one setting, in small groups as well as larger events and conferences.
- Through e-mail, written documents and publications, blogs, Twitter, Facebook, YouTube and images posted on the web, both on their own website and on partner websites.
- Via services definitions and service information provided on the UK HM Government Digital Marketplace.

3DNovations uses open-source technologies such as Opensimulator and aims to offer its services free of charge to citizens with autism and/or complex needs who need its services and cannot afford to pay for them. Hao2.eu charges organisations and partners for the 3DNovations services it provides because these services help them to innovate and improve services, particularly for people with autism and disabilities, and save them money and operational costs. If organisations or partners are unable to afford 3DNovations services, they can gain access to 3DNovations through 3DNovations hubs or through collaborative projects with Autus – the Hao2.eu Foundation. The research behind the initiative has been user-led from the outset. Their input/insight has ensured that it adopts an action learning approach. Those who benefit include not only people with autism themselves, but also those who take care of them and the society in general, through improved use of the work force.

EVALUATION AND DISSEMINATION ●●●

The core research team is relatively small but draws on an extensive network of freelancers and contacts in industry and academia. This is in part because of the focus on not simply emphasising research, but also doing something in practice. Any reports available are consequently not in the academic, peer-reviewed category. Still, the initiative does get reported on frequently in (inter)national media. The research team has a strong presence in a variety of media facing diverse audiences. About 600 people have been helped so far; probably about 1/3 of those people have autism. The other people are trainers, parents and coaches. There are examples of unemployed people with autism who have university degrees and after using Hao2 got a job. Other people without qualifications (for example who had no degree because of difficulties at school), who got training, felt better about their potential on the job market, and then got a job. There are examples of people who have been involved in the programme for a very long time (with considerable educational needs) and others who are only in the programme for a very short time (only a few types of courses).