

# WHOLODANCE

## Whole-Body Interaction Learning for Dance Education

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## Deliverable 8.5

### Outcomes of the strategic exploitation seminar

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**DISCLAIMER:** the present document represents the first module (Outcome of the Exploitation Seminar) of a two-phases deliverable (Outcome of the Exploitation Seminar and First Exploitation Plan). This peculiarity is due to a mismatch occurred in the WP description.

In fact, in the Task description (T8.7 Exploitation) it is stated that “Within the first 18 months of the project, a Strategic Exploitation Seminar, involving all WhoLoDancE Partners, will be held with the aim of identifying the most likely scenarios within which to position the project’s expected exploitable outcomes. The results of the seminar will be the basis for preparing a First Exploitation Plan by month 24”.

Though, the WP8 list of deliverables only contains a single Deliverable (D8.5 - Outcomes of the strategic exploitation seminar and First Exploitation Plan, due at M18), according to a previous formulation of the WP itself.

Given the fact that the introduction of six-months gap between exploitation seminar and first exploitation plan was deemed necessary to complete the market exploitation and a preliminary business modelling, with the involvement of all the partners (and having the discussion held in the seminar as a basis for more in-depth analysis and understanding of the key exploitable results and relevant markets), the partner responsible for WP8 (P1 – Lynkeus), decided to keep this gap, thus submitting the same D8.5 twice: the first draft, with only the outcome of the seminar, and the updated draft, also containing the first exploitation plan.

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## 1. Introduction

In view of the preparation of the forthcoming First Exploitation Plan (due in M24), an exploitation seminar was foreseen in the DoA, with the aim of “identifying the most likely scenarios within which to position the project’s expected exploitable outcomes”. This seminar was held on 26<sup>th</sup> June 2017 during the biannual internal review meeting of the WhoLoDanceE consortium. This deliverable constitutes a briefing of the discussions that took place followed by a presentation of the agreed forthcoming actions that will lead to the preparation of the First Exploitation Plan. Eventually, this document will constitute the basis for the Exploitation Plan itself, which will try to expand the brief information herewith contained.

The seminar focused on two main issues, which are expected to play a key role in concretizing the content of the First Exploitation Plan. The first one was the form of the final product of the research and innovation effort made within the framework of WhoLoDanceE, which will constitute the backbone of a future business model. The second one was an outline of the IPR management strategy.

## 2. Objectives and intended content of the First Exploitation Plan

The discussion in the seminar started with an effort to reach consensus on the intended objectives of the forthcoming exploitation plan. The partners agreed that the main goals of such a plan should be the following:

1. Identification of the potential innovations stemming from the project
2. Analysis and business planning of individual exploitation initiatives by each partner
3. Analysis and business planning of joint exploitation ventures

In order to reach these goals, the plan should provide the means for:

- supporting the partners and coordinating the Consortium activities in performing a preliminary market analysis,
- exploring the most suitable business model for the innovations implemented within the project,
- helping the partners to define an effective IPR management strategy,
- maximising the knowledge exchange among the partners

Based on these objectives it has been agreed that the First Exploitation Plan will consist of:

1. An *analysis of the market* and the commercial outreach potential of the different solutions implemented during the project
2. A *preliminary business model* and a business plan for identifying the most promising exploitable results
3. An *IPR management scheme* for effectively dealing with all relevant issues.

### 3. Methodological approach

WhoLoDance exploitation approach aims at pursuing two separated, but interwoven, approaches. On one hand, individual exploitation plans will be defined, exploring each individual partner's core business and expertise, and its relevant business opportunities. Each partner will be supported by the team in charge of exploitation (P1 – Lynkeus) both in identifying the project's results most suitable to become exploitable products, and in sketching an initial business model.

On the other hand, a consortium-wide collective exploitation plan will be outlined, leveraging on the added value of an integrated solution. This plan will aim at bringing synergistically together all developed tools, defining this way a comprehensive value proposition by supplying a single solution to different market needs, and by bundling the appropriate features of the different products. This will imply developing as well a comprehensive market analysis, and the adoption of a preliminary exploitation model, identifying target customers, markets, and a possible timeline for full market outreach.

The collective exploitation approach will be inspired to the multi-sided platform (MSP) concept, as developed by the 2014 Nobel Laureate for Economics, Jean Tirole. This remarkable economist has, in fact, highlighted, how generating strong positive network effects on one side of a multi-sided platform can trigger comparable network effects on other sides, and results into being the organisation model showing the greatest capacity to scale, precisely because based on the implicit support that the first network effect determines on the similar network effects developing on the other sides served by the platform.

In this approach, different types of services, provided by different stakeholders, converge on a single and comprehensive offering, in which the different professional services move away from centralized and vertically integrated models (in which all client services are provided by their employees), and move instead towards the decentralized MSP model, in which they enable independent contractors to deal directly with clients, even though often maintaining a significant degree of control over the contractual terms between clients and professionals

As it will showed in Section 3.3.1, the overall effectiveness and efficiency of the MSP model can be further enhanced by combining it with the adoption of Blockchain and Smart Contracts solutions.

#### 3.1 Market analysis

The first part of the exploitation plan, i.e. the analysis of the market and the commercial outreach potential is going to be conducted by Lynkeus (P1). This will primarily imply a thorough overview of the current state of the art, of relevant ongoing initiatives, and of potential end users and of their needs.

Of course, some initial analysis of this type had already been developed when submitting the project and while unrolling it in the past 18 months. Having now a much clearer understanding of the technological developments and the types of use scenarios that they can optimally support, a more detailed and focused overview can be undertaken developing further the initial analyses of users' needs. The feedback acquired by subject matter experts during the Users' Board sessions is expected to play a significant role in filtering the needs and articulating the outreach potential in a more detailed manner. Apart from the Users' Board sessions, the consortium is also planning to utilise relevant feedback acquired during an upcoming dance workshop in Toulouse in December 2017, where the instructors will make use of the technical instruments developed by WhoLoDancE. This workshop is meant, in fact, to serve as users' experience experiment.



### 3.2 Preliminary business plan

The preparation of the second part of the exploitation plan, i.e. the preliminary business model and business plan, requires an effort by all partners, and will be coordinated by Lynkeus (P1).

The plan is to adopt the Lean Launchpad methodology, as entrepreneurship methodology for testing and developing business models based on querying and learning from customers. This means that the consortium will, in practice, come up with a number of alternative hypothetical solutions for a business model, for which they can collect feedback from potential end users and subject matter experts. This requires the planning of a number of brainstorming and assessment sessions with all the relevant partners, during which a number of alternatives will be investigated by means of a trade-off matrix. Lynkeus will design this matrix prior to the sessions. Once these alternatives are formulated to a satisfactory degree of detail, they will need to be evaluated by potential end users. The feedback can be collected by individual interviews, dedicated workshops during future Users' Board sessions, and during the users' experience experiment in Toulouse. The insight gained by this interaction with end users will allow to optimize the alternatives' framework and to facilitate choosing the most appealing one.

A preliminary (and simplified) business model canvas – implemented according to the Lean methodology – is as follows:

Simplified Lean Canvas		WHOLODANCE	Iteration #1
<b>Problem</b> 1: Lack (or very little) access to target users in the dance industry to high level motion capture repositories 2: No tools (other than costly 3D packages) for direct interaction with motion capture repositories (Dance related of other) 3: Little or no usage of interactive 3D tools in choreography 4: Untested and unknown paradigms of using immersive technology for dance teaching	<b>Solution</b> 1: WhoLoDance repository availability to the dance industry via custom (friendly) tools 2: UNICA – MOTEK motion blending engine will offer a tool to do just that for relatively low prices (fraction of the cost of 3D packages) 3: We believe that one of the outcome of the project will enhance such usage. Both web base (The annotator and other online tools) and local (Unica blending engine and low cost motion capture devices) 4: Once WhoLoDance is complete and holographic tech will be advanced enough to allow immersive teaching experience, this will happen	<b>Unique Value Proposition</b> The total (converged ) assets of the WhoLoDance project will offer new dance teaching and choreography paradigms. Such paradigms transcend any specific dance genre and are applicable to any dance situation WhoLoDance can be used in a class context, as an advanced choreography tool platform or live in a show context.	<b>Customer Segments</b> Dance teachers Professional dancers Choreographers Animators Graphic designers Performance artists  <b>Preliminary selling channels</b> (Free samples and licensing based - without being cost prohibitive)

Figure 1: WhoLoDanceE preliminary and simplified Lean Canvas

As indicated, on the top of the canvas, this is only a first interaction, while these kinds of Canvas are subsequently updated and edited through different iterations with the relevant partners and stakeholders.

Regarding the choice of a business model, a preliminary discussion was already held during the Exploitation Workshop held in London on June 26<sup>th</sup>, 2017. The partners of the consortium tend to agree that a most

suitable solution based on the technical developments that have already taken place would be an integrated Unity-based WhoLoDancE platform. Unity is a cross-platform game engine developed by Unity Technologies, which is primarily used to develop video games and simulations for computers, consoles and mobile devices. Additionally, it is believed to be crucial to enable also a wider use of the relatively less costly low-end devices by users that cannot afford the entire platform. For this reason it has been agreed to take into account, among others, the option of a multi-layered software licensing approach (see also figure 1).

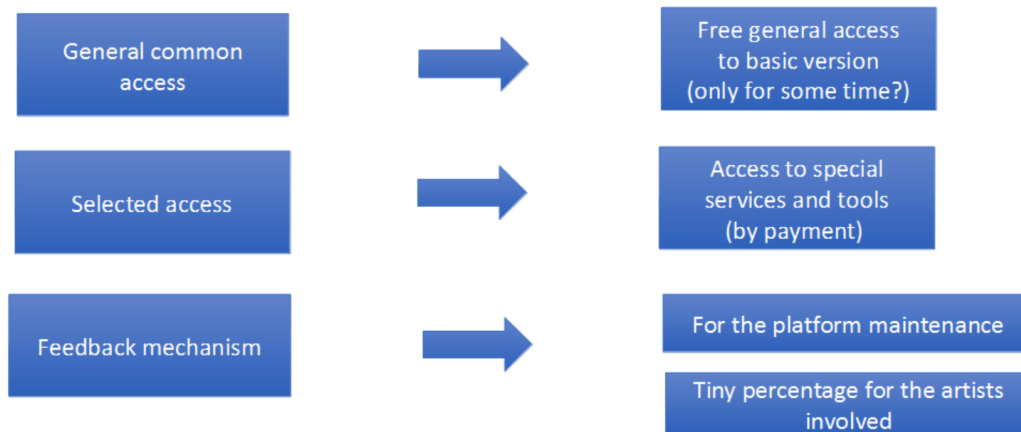


Figure 2: A three-layered software license agreement

### 3.3 IPR management scheme

A prerequisite for the rationalization of an IPR management scheme is to have a comprehensive overview of all IPR-related issues pertinent to WhoLoDancE. A desktop research based on Lynkeus' experience in innovation projects is expected to define the protection means of the results (patents, copyright, etc.) which can be more appropriate and suitable for maximising the effectiveness of WhoLoDancE exploitation initiatives, while adequately protecting the interests of the partners.

During the discussion, a number of possible routes for the exploitation, both of individual and of joint results, have been identified:

- Further internal research
- Reuse of results for new collaborative research projects
- Licensing
- Joint Venture/patents' pool
- Spin-off

The Consortium focused in particular on the case of jointly generated results, i.e. the kind of results which is formed by indivisible parts that cannot be attributed to individual partners: in this case the approach proposed is that all the Contributors agree that the resulting patents and other registered IPRs issued for protecting such results will be jointly owned by the Contributors. A Joint Ownership Agreement should therefore be determined as part of the Final Exploitation Plan of the Project.

As per the Consortium Agreement, ownership of background will not be affected by the participation in the project. Though, to avoid that the inaccessibility to a specific background hinders the good prosecution of

the project and damages the collective interests of the Consortium, jeopardising the implementation of the overall project results, WhoLoDancE will consider the possibility of drafting a specific Memorandum of Understanding among the partners for regulating the use of specific backgrounds.

### 3.3.1 The particular case of dancers' IPR

Performing artists (i.e. the motion captured artists, but also artists involved in the testing and validation of the final product) may wish to enter into agreements regarding ownership and use of the records of their performance.

To enable such a protection of individual artists' IPR, a blockchain solution for claiming their copyrights will be contemplated. In fact, Blockchain and Smart Contracts (executable pieces of code, stored on the blockchain for future execution) have demonstrated to be particularly suitable for protecting Intellectual property (and relevant solutions are already available on the market, in particular for the case of musical productions), as the technology allows to:

1. provide a definitive and non-editable and perpetual Proof of Existence of a particular IP, proving permanently its ownership;
2. recognise each single usage of a particular IPR "stored" in the blockchain.

Through the smart contracts, which automatically activate a transaction (e.g. payment of a fee or royalty) at the occurrence of a specific event (e.g. the usage of a particular IP), the artists IP could be automatically protected and rewarded, without requiring any further direct human involvement after the smart contract has been encoded and integrated in the distributed ledger (which is what makes these contracts "smart" or self-enacting).

Lynkeus is currently in the course of acquiring a significant experience in the implementation of similar solutions within the framework of another EU funded project (MyHealthMyData), and might decide, if given the appropriate support by all consortium partners, to use this experience for detailing a suitable blockchain and smart contracts implementation also within WhoLoDancE.

## 4. Exploitation seminar – key topics discussed

### 4.1 WhoLoDancE outcome - Product or research tool?

A key topic discussed during the seminar has focused on the nature of the final expected result of the project. Will that be a product, or rather a research tool to be provided to the relevant community (ideally for free) to refine the implemented solutions and better explore the concrete adoption potential in the relevant working environment, helping to better define the use case scenarios?

Some arguments were put forward fostering such an option. The first, and foremost, issue has been that – for the time being – there is not an explicit need/demand on the market and in the relevant community for the high-end solutions proposed by the project. Beside the desk assumptions that can be made (see tentative draft business model canvas at p.9), early exploration of the end-users' sentiment regarding the use of such technologies in the dance field is rather negative.

Some of the dance partners have noticed that – in fact – a prejudice exists in the community regarding the adoption of technology in dance, mainly motivated by an underlying contrast between the “reasoning of the machine” and the “intuition of the body” (embodied knowledge), and the relevant belief that specific high-level features of the movements and their relevant meaning can't be effectively represented (and possibly not even grasped) by a “movement machine”, filled-in with motion-captured and atomised movements (a critique that recalls former criticisms about the role in technology in arts, and particularly in music, i.e. the truth and inherent “aura” of the original artistic production against its technical reproduction and “atomisation” in individual and separated pieces).

In this sense, the (possible) value of such innovation will need to be thoroughly tested by the relevant community, which shall be provided with the final tools for free, for expert evaluation and exploration of use case scenarios compatible with the integrity of the artistic expression/creation.

An intermediate solution has been also proposed: the high-end/final outcome of the project could be provided for free to a selected community of expert for in-depth evaluation, while at the same time commercial exploitation might be pursued for selected (and far less problematic) features implemented within the project, suitable for practical usage (e.g. virtual reality for staging of new pieces prior to the implementation in the real life, or creation of new show using the virtual avatars, etc.). The viability of such an approach is somewhat encouraged by the feedback obtained during the various interviews made (see WP1 deliverables).

Following this approach, in consistency with the Lean Launchpad methodology, it could be possible to explore the needs and desires of the community, performing live demonstration to showcase various features of the implemented system and different possible use case scenario, thus understanding for what kind of service they would be willing to pay, and then providing them with such a service.

If the Consortium manages to find ways to generate income (also from “not-too-expensive” subscription fees for specific tools), this could generate enough resources for maintaining the platform available for open access and expert evaluation.

Finally, the possibility of considering other fields of application (e.g. rehab), has been discussed, as well as the option of re-using the technology, for completely new/unforeseen use case scenarios.

#### 4.2 Sustainability and open access

A second topic, inherently related with the first one, has focused on the sustainability of the project's results and the relevant open access policy to be adopted.

The discussion started with the general obligation for EU projects to provide open access to the results of the project (data collected, tools implemented). This makes the sustainability of the results (and motion captures collected) a key objective in itself.

The Consortium, though, has not yet agreed on its basic sustainability approach (and relevant resources), to guarantee the maintenance of the motion-capture repository available (managing, upkeeping, updating, etc.).

It has also been remarked that – although the availability is to be ensured to comply with the relevant EU rules - it would be difficult to maintain the system for free – even because of the lack of critical mass to generate resources in different manner (and not through direct fees). Thus, specific resources should be found (see the point discussed above, relating to commercial viability) and devoted to keeping the system live, while at the same time having enough leeway for perfecting the needed user interface, ensuring the needed level of quality and user-friendliness to ensure its usability and acceptability by the relevant community.

One idea could be of being ready with a detailed plan for future sustainability by the end of the project and then seek additional funding for pursuing this goal.

#### A scalable model?

The discussion ended with the envision of a scalable model, gradually achieving its self-sustainability. Elements of this model are: 1) a working platform, with a proper interface, and validated tools; 2) this would allow to reach a critical mass to sustain the system for free (general didactic of movements and body knowledge); 3) a widespread validation of the tools protection could then enable professional usage for getting (using tools for teaching) and giving something (creating courses) / dedicated market and services for dance. The whole process could be supported by crowdsourcing schemes and/or by a scheme of “more data for usage”, i.e. new partners are included in the venture if they provide new data for validating or enriching the system.

### 5. Final remarks

To summarise the outcome of this first discussion about the WhoLoDancE exploitation perspectives, the key topics which will be taken into account in the preparation of the first exploitation plan are the following:

- The consortium will need to carefully examine whether there are specific guidelines in respect of open/restricted access for EU funded projects.
- Sustainability of the project outcomes needs to be ensured by the chosen exploitation strategy, and any prevailing issues need to be explicitly dealt with. It is for instance important to make sure that

the WhoLoDancE data repository is well-maintained. To this end, Athena RC (P2), being an expert in the field, could provide a proposal for the long-term functionality of the repository.

- Consider if and how further tools can be added-on at a later stage.
- The consortium will need to carefully examine any requirements/restrictions in respect of economic benefits for third parties.
- The consortium has shown to be favouring the adoption of a scalable business model. This means that by the end of the project there will be a fully-functional innovative platform capable of attracting potential customers, according to the already shown Figure 2 (*A three-layered software license agreement*) at p. 10.
- For a full market uptake, a follow-up project could be a needed step for achieving a fully viable solution.