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Work Quote/Bid/Proposal

Project: Modeling, Simulation, and Concept Video for Proposed Product

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Technical

Project Description:

Short project description:

The purpose of this project is to create a video that will potentially be used as a marketing/advertising/feasibility production video illustrating the concept, function, and value in the proposed product. The final video will include both 2d and 3d elements, i.e. models, motion, textures, effects, lighting, etc. as well as video, text, sound, and may include digital photos and voiceover/captioning. The vendor will create all of the previously listed elements except voiceover and text captioning, which will be provided by the ████████████ team.

List of important requirements:

- Create concept/marketing/advertising video to display the core functionality and value proposal of indicated product.

- Consult team through brainstorming, feedback and review, and design iteration consideration. Feedback and review will be post each required phase of production.

- Use 3D modeling software to create each required part of the product, in accordance with team feedback/direction and compatibility with game engine.

- Develop product simulation and demo with game engine using vendor created 3d assets.

- Record and capture video and potential audio for the product in simulation.

- Create/obtain required content (video, sound, and text) for final delivered video.

- Edit, produce, and present a 3-dimensional, simulated, and captioned concept video that represents the product's value proposition. In addition, there will be descriptions of functionality and process, for marketing, advertising, and feasibility tests that includes 3d renderings and text, 2d images and text, as well as sound and potential voiceovers.

Possible risks:

- The implications of using Creative Cloud in the design and development of assets using their products. Blender and Unreal Engine 4 are open source-esque software (for the purpose of our project). Potential for research.

- Potential bottlenecks of learning a single, technically difficult, adaption of 3d modeling or game development fundamentals related to the game engine or 3d software in use. Some necessary research, learning, and application may be required; testing and debugging may be required with any digital creation environments or video development, but is nearly always worked out with further research.

System architecture and technologies:

- 3d modeling, i.e. creating primitives, finalizing meshes, configuring light masses, and testing materials based on the product design and form factor, determined by previous mockups and team brainstorming, will be created with the open source **Blender** 3d modeling software and tools.

- Simulation, i.e. motion, animation, event based triggering, blueprint development, environment sounds, materials, and particle effects will use the **Unreal Engine 4** game engine editor and development environment.

- Recording, capturing, and rendering of game footage will be produced with **FRAPS** game capturing software.

- Editing, captioning, and producing video, in visual and audio, will be constructed through the Adobe Creative Cloud, specifically **Adobe Premier Pro** and **Adobe After Effects**. (All Adobe products are now available with **Adobe Creative Cloud** at **$40/month**).

- Storyline mockups, creating and editing textures, and future design aspects will use Adobe Creative Cloud, specifically **Adobe Photoshop, Adobe Illustrator**.

- There is potential use for prototype design tool **Sketch** to create storyline flows of each scene in the production video, to create a better user experience (**Mac only; $99/one-time fee; not required software but recommended; I normally use a 30 day trial version**).

Additional Details:

Necessary Hardware and Software:

- A graphics card of NVIDIA GeForce 470 GTX or AMD Radeon 6870 HD series card or higher is the minimum required hardware for on-site workstation and the Unreal Engine 4. NVIDIA GTX 660 or GTX 750 TI or higher would allow for faster or more complex rendering and game capture but is not required.

- Necessary proprietary software includes Adobe Creative Cloud ($40/month), FRAPS ($37/one-time fee and unlimited license), and Sketch for Mac ($99/one-time fee and unlimited license).

Communication:

There will be an initial meeting with team for project brainstorming, form factor projection, and concept video story development. Team will review and give feedback upon completion of each stage of project. Extensive communication between ▮ and Tyson will be done via email and on-site. Any conversation/information regarding the project will be CC'ed to ▮ for further review. There will be a final screening of proposed deliverable video with built-in time allowed for review and final design or development changes and polishing.

Review Methods:

Testing will be done primarily by team review and peer feedback per phase both in-house and via email.

Documentation:

Documentation will be provided to record and review process and progress. Documentation of work and hours will take place digitally with the use of a shared Google Doc and Sheet or preferred file management. Documentation of requirements will be updated weekly or bi-monthly based on phase completion or important discoveries. Email communication will be conducted with Eric, the Engineer Manager, and CC'ed to ▮, President and CEO.

Project breakdown with estimated man-hours sorted by labor category:

Please see attached spreadsheet.

Clear deliverables after each stage:

- Initial and final 3d and video mockups; review of proposed simulation components.

- 3d models of product, importable to Unreal Engine 4.

- Unreal Engine 4 completed map with simulation recordings.

- Final review and polish for production level concept video and completion of project.

Optional extended deliverable per request:

- Customized and tweaked final product for potential customer presentations.

Development processes will be handled in the most effective manner in terms of time and budget:

I have a wide variety of skills including game development and CAD experience. I had not used them recently, but have reviewed and researched the software, and feel confident I will be able to deliver a more than satisfactory, 3d simulated, concept video.

Open source software will save money immediately and in the future, i.e. Blender is completely open source and free to use for personal or financial gain and Unreal Engine 4's royalty fees only apply to video games and apps made on the game engine.

Development processes will follow the software development industry's best practices, as closely and with as much knowledge as possible.

Project delivery plan by stages:

Phase 1: Setup, brainstorming, initial mockups, consideration of future form factors, and review of Unreal Engine component examples. **Phase 1 will be completed upon review of final mockup and produced Unreal Engine components.** All components will be reusable and built by vendor.

Phase 2: 3d modeling of primitives, meshes, and basic textures for use in construction of product in accordance with the game engine. **Phase 2 will be completed upon review of captured images and/or captured video of proposed projects 3d models.**

Phase 3: Game engine development including import of 3d models, animation, Unreal Engine 4 "blueprint" development and programming, object generation and simulation of product, camera rigging and viewport recording, materials, lighting, and particle effects. **Phase 3 will be completed upon review of live game simulation and in-game recordings, viewable as an executable file in-game or mp4 video recording.**

Phase 4: Create, edit, and produce production level concept and function video of product for marketing, advertising, and feasibility tests. **Phase 4 will be completed upon review and final screening of finished production video;** Final project will be a deliverable upon satisfaction with team and BioFilm Management of proposed project.

Phase 5 (Optional): **40 additional hours will be made available, as needed, for further customization and tweaking of the final deliverable at $35 per hour.**

Financial

Cost per labor category/requirement:

- On-site setup, presentation material, mockups for simulation and video, potential designs of future form factors, and all team meetings in total (approx. 40 hours x $30/hour = $1200)

- 3D modeling (approx. 40 hours x $30/hour = $1200)

- Game engine development and animation (approx. 80 hours x $30/hour = $2400)

- Video compiling, editing, and production (approx. 40 hours * $30/hour = $1200)

- Optional, extended, customization of production concept video (final product) (approx. 20-40 additional hours * $35/hour = $700-$1400). This optional, additional, extended work would only be applied upon completion of the fourth phase, or when the last phase has NOT yet been completed AND the work extends beyond the vendor's lengthiest estimate of 240 hours.

Budget Calculation:

I propose the project will take around 200 hours or five weeks of 40 hour work weeks. The project should not take more than 240 hours (time spent on major bottlenecks) and may take as little as 140-160 hours (if the world is perfect). 40 additional hours of work will be made available, beyond 240 hours or completion of four phases, for tweaks and customizations of the final deliverable upon request.

The proposed cost of the project is $6000 USD; negotiation is welcome. The project cost will not change dependent on hours worked, up to 240 hours. An hourly rate of $35 will be applied to any optional and additional work upon completion of the four phases OR when the vendor's initial work extends beyond 240 hours.

This estimate puts into consideration that three or more unique, advanced, and technical job positions/roles are required to complete described project, in its entirety, i.e.

- mockups for potential, future, 3d simulated product form factors and functionalities (2d and 3d drawings) (product design or artist),

- modeling 3-dimensional assets for use in simulation (Blender or zBrush - open source 3d tools and environment) (3d modeler),

- game/simulation engine development, animation, and programming (Unreal Engine 4 - royalty free and open source for third-party simulations) (3d game/simulation developer and animator with potential programming in C++ scripting),

- potential 2d and 3d texture asset creation (Adobe Photoshop and Adobe Illustrator through use of Adobe Creative Cloud) (game artist, graphics design or 3d modeler),

- video capturing and encoding solution for games (FRAPS - royalty free, game capturing software and Adobe Encoder) (Game developer or video editor),

- video composition, editing, captioning, encoding, and rendering of a production quality concept video displaying product functionality through sound, video, text, and image (Adobe Premier Pro and Adobe After Effects) (video producer and editor with knowledge of After Effects).

Payment Terms:

Total Cost = $6000 USD at 200 hour approximate completion time.

Requesting payment upon satisfactory completion of each of four phases and deliverable, which includes peer and team review of respective phases.

40 additional hours of work at $35/hour, will be made available, as needed, for customization and tweaking of the final deliverable beyond 240 hours or upon completion of the fourth phase of product.

Cost, time, and payment methods are negotiable.

Phase Stage and Description	Description	Hours per activity	Hours
Phase 1			**36 Hours in Phase 1**
Setup			4 Hours
	Install Graphics Card and Drivers	1	
	Download and Install UE4	1	
	Download and Install Blender	1	
	Download and Install Adobe Creative Cloud Suite	1	
Get Example Modules for Team Intro / Brainstorming			4 Hours
	Research and Organize Clips of Pertinant Examples for Upcoming Brainstorming	4	
Review Provided Assets and Considerations of Team Brainstorming			6 Hours
	Review Aqcuired Assets and Content (pictures, drawings, text, and CAD designs)	3.5	
	Prepare for Brainstorming Session	2.5	
Brainstorming and Team Meeting			2 Hours
	Presentation of Pertinant Examples to Team	0.5	
	Present Timelines and Work Projected for Project to Team		
	Project Description and Purpose Discussion	0.5	
	Basic Design Form Factor/Requirements of Simulation		
	Potential Ideas and Projections for Unreal Engine 4 Simulation	0.5	
	Potential Timelines and Storyboard for Production Video		
	Assign/resolve Required Content about Product, from Team, in Text and Audio.	0.5	
	Explain and Schedule Future Meetings		
First 2d Mockup for Unreal Engine Map			6 Hours
	Mockup 1 - Simulation Drawings	6	
First Mockup for Video Layout and Storyboard			6 Hours
	Mockup 1 - Video Storyboard	6	
Development, Review, and Feedback for Final Mockup			8 Hours
	Consider Feedback and Review via Email / Research and Development		
	Finish 2d/3d Mockups for Simulation and Video Storyboard		
	Deliverable of Mockups and Potential Unreal Engine Components		
Phase 2			**40 hours in Phase 2**
Create All Assets/Props/Objects in Blender/UnrealEngine4			40 Hours
	Blender Construction and Rendering of Basic Meshes and Models	24	
	Blender export/Unreal Engine Import	4	
	Construct in Unreal Engine with Imported 3d Assets	12	
	Review and Feedback of 3d Models		
	Deliverable of 3d Models in Picture and/or Video		
Phase 3			**80 Hours in Phase 3**
Research and Create Project Modules and Functionalities			20 Hours
	Transparency	1	
	Grass	3	
	Conveyor Belt and Boxes	4	
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	Liquid Pool	2	
	Heater Element	2	
	Blue and Orange Particle Effects	2	
	Design/Develop/Test/Run/Review	4	
Programming, Rigging, and Animating the Simulation			60 Hours
	Unreal Engine 4 Blue Prints, Programming, Animation, Interaction	40	
	Unreal Engine 4 Effects, Materials, Lighting, and Rendering	20	
	Review and Feedback of Final Simulation		
	Deliverable of Final Simulation in Captured Video and Game Executable		
Phase 4			**40 Hours in Phase 4**
Creating Video, Text, Voice, and Sound			
	Create Video Based on Video Timeline, Mockup, and Team Feedback	20	
	Review and Feedback for Final Concept Video		
	Finish Video for Presentation Based on Review and Feedback	20	
	Deliver Final Concept Video Upon Satisfactory Review		
			196 Hours in Total