

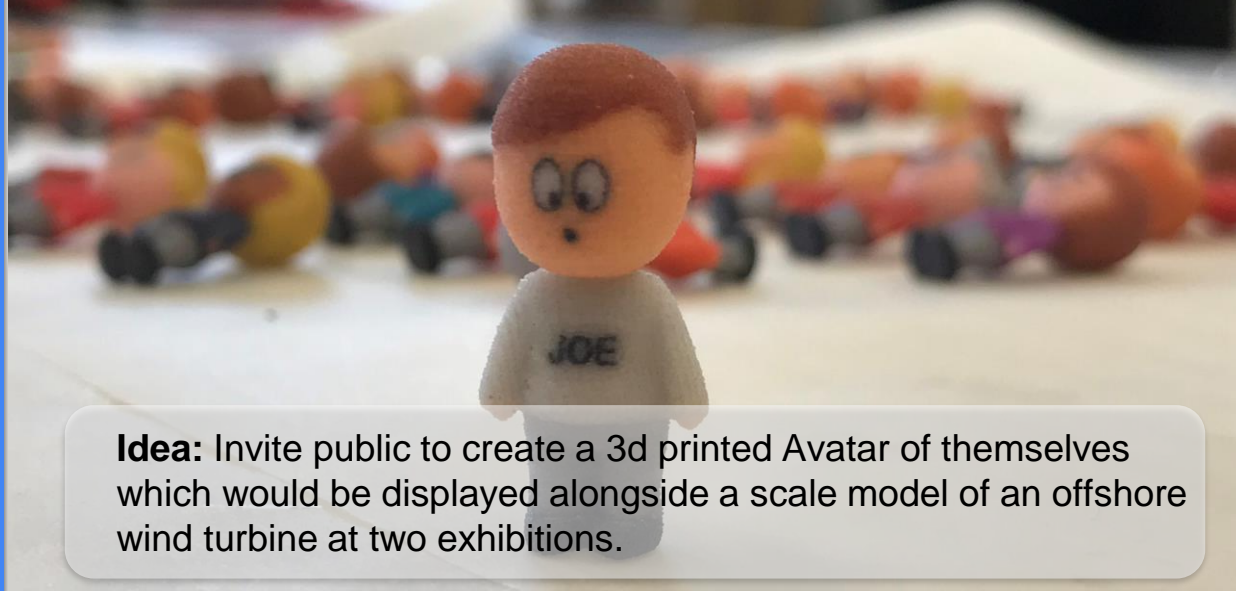
Celtic3d Ltd

3d Modelling and 3d Printing Services



Avatar Project Background

Make commissioned by Vattenfall UK to come up with a concept to boost engagement for two public exhibitions for the European Offshore Wind Deployment Center.



Sponsor
Run events

Concept
Design
3d Printing

Web front-end
3d model generation
Batch management

Avatar Project Objectives

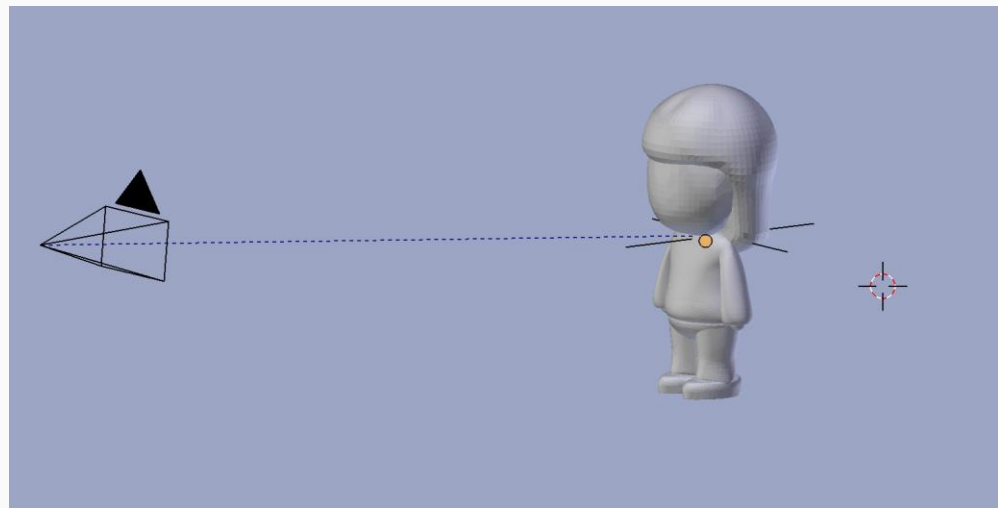
- 1) Generate customized 3d models from user input.
- 2) Full colour models plus custom geometry.
- 3) Batch management system for collating model files for 3d printing.
- 4) Web front-end, responsive, mobile first, scalable to handle peaks in demand.
- 5) Data privacy compliance.



3d model creation

Blender (blender.org),

- Open source digital content creation suite.
- Highly extendable – built-in Python interpreter + bpy libraries.
- Cross platform (running in headless mode on Linux server).



Challenges

| Issue | Solution |
|--|---|
| How to collect user input? | Transparent .png overlays |
| Webform has lots of images to download. | Use CDN and Memcached (plus optimized assets). |
| 20 seconds to generate model. | Generate 3d models via asynchronous background process. |
| Manage hundreds (to thousands) of 3d model files | Use vertex colours to avoid need for separate image files. Batch management to group files optimized to printer capacity. |
| Potential spam | E-mail verification on registration. |
| Data Privacy | Written agreement covering data handling roles and responsibilities. Specific privacy policy. |

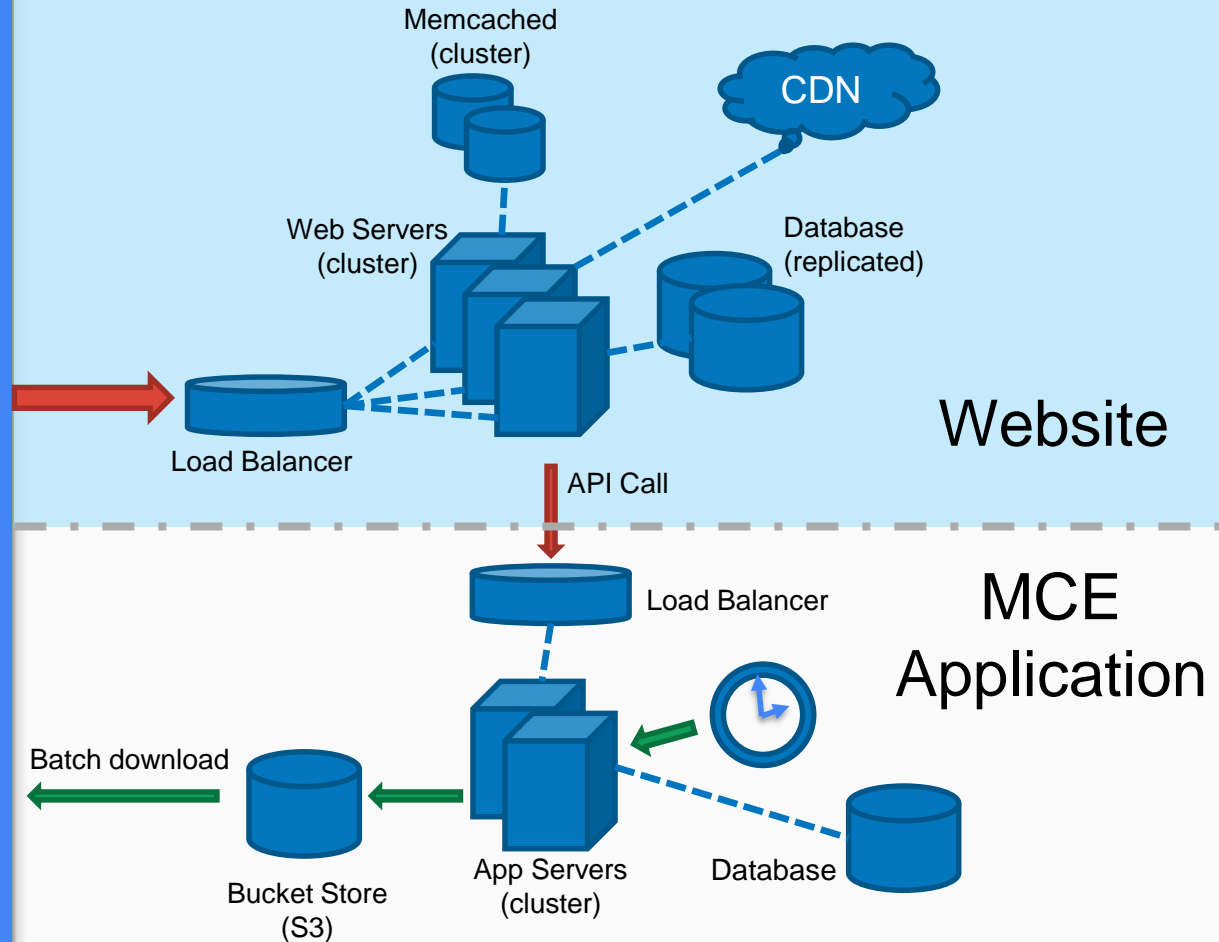
Mass Customization Engine (MCE)

Web and App operate independently, web site could be hosted anywhere.

Secure. SSL.

Resilient. Auto-scaling with auto-restore.

Responsive. Immediate response to user with 3d model files created in the background via a batch process.



Create your Avatar

www.celtic3d.com/vattenfall/avatar/

Balmedie Library:
1st - 10th February 2018

Aberdeen Central Library:
13th - 22nd February 2018



About

*20 years experience in large scale IT and Technology development,
10 years experience in 3d modelling*



Gavin Bain,
Director – Celtic3d Ltd

IT pro and technology enthusiast. Expert
in cloud computing, 3d modelling and 3d
printing.

Established: September 2016
Based in Aberdeen.



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