Onshape enables agile product design with full-cloud product development platform

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Onshape aims to address key pain points in the design and development process for manufactured products with a full-cloud product development platform that enables rapid iteration for agile product design.
Summary

Agile software development is centered on the collaborative efforts of cross-functional teams that rely on continuous improvement to provide a rapid and flexible response to evolving end-user requirements. Although it has become a well-known approach to software development, we believe it reflects a larger trend. The ‘agile’ mentality is spreading beyond DevOps – this is a major shift in how organizations plan and execute work.

Onshape aims to bring the principles of agile development to the design and manufacturing world, with a cloud-based platform that combines a wide range of tools and capabilities – data management, computer-aided design (CAD), workflow, real-time collaboration, design analytics and integration to business applications – to enable rapid iteration and team collaboration for agile product design.

451 TAKE

Onshape was designed as a cloud-based platform to address key pain points in the design and development process for manufactured products. It has a growing customer base, including well-known innovators in defense and robotics, that validates its approach. As the only fully cloud-based competitor, the company has a first-mover advantage. Furthermore, the complexities involved in delivering a cloud offering provide an important differentiation that its competitors cannot easily match. Onshape is in a good position to benefit from the growing interest in technologies that can help organizations adopt an agile approach to address rapidly evolving market requirements. Its key challenge will be creating awareness for its value proposition to expand beyond early adopters.

Context

Onshape provides a CAD software system delivered over the internet that is used by professional engineers and designers for product design. The company was founded in 2012 by CEO Jon Hirschtick, David Corcoran, Scott Harris, John McEleney and Tommy Li. Hirschtick’s prior experience includes serving as founder and CEO at SOLIDWORKS, a CAD and engineering computer program, and as a manager at the MIT CADLab.

Onshape is based in Cambridge, Massachusetts, and currently has about 100 employees. The company has raised $169m in venture capital to date including its most recent series D round in April 2016, which raised $105m.

Key verticals include advanced robotics, biomedical devices and industrial machinery. Named clients include defense R&D company Silverside Detectors, Hirebotics (an industrial robotic systems integrator), NASA’s Asteroid Challenge Lab, biotech startup BellaSeno, and Absolute Machinery, a provider of plastic injection molding machinery and robotic equipment.

Products

Onshape aims to help organizations iterate new product versions faster with agile product design – an approach similar to agile software development for manufactured products. It seeks to modernize their design processes and workflows, eliminating bottlenecks and optimizing workflows and team collaboration.

The company provides a full-cloud product development platform that brings together advanced 3-D modeling tools, data management and real-time collaboration in a database-centric architecture that is accessible on any device, including smartphones and tablets. It was developed as a full-cloud product, delivered via a SaaS-based model.
This approach aims to address key pain points in the design and development process for manufactured products. These include bottlenecks and gridlocks that result from the complexity in software design tools that require downloading, installation, use of license codes and servers, and that are not built for co-editing and collaboration.

The tools used by engineers and designers for product design typically encompass a combination of software applications such as Microsoft PowerPoint, storage applications like Dropbox, simulation software and spreadsheets, as well as CAD and in some instances, even pencil and paper. Onshape saw the need to modernize the product development process, replacing these tools with a new generation of design and development software that could address enterprise requirements for speed, innovation, efficiency and security/compliance.

Currently, the typical product design workflow is serial. Only one engineer can work on a CAD file at a time, and suggestions for design improvements must be sent back and forth using a separate tool such as email or Dropbox. Onshape’s cloud database architecture enables multiple engineers to work on the same product design in parallel, seeing each other’s changes in real time. Onshape’s edit history tracks design changes, allowing team members to revert back to a prior design stage at any time.

Competition

Onshape states it has no direct competitors that provide a fully cloud-based CAD software. Key players in the CAD space include Siemens AG and Dassault Systemes SOLIDWORKS, CATIA and ENOVIA, NX, PTC Pro Engineer (Creo) and Autodesk.

SWOT Analysis

**STRENGTHS**
A key strength for Onshape lies in its founders’ experience as entrepreneurs, and long trajectory working with CAD technologies. Early adopters in verticals such as advanced robotics, biomedical devices and industrial machinery serve as reference points that validate the benefits of its value proposition.

**WEAKNESSES**
Onshape can benefit from expanding its go-to-market efforts to raise awareness for its differentiated approach and expand its client base beyond early adopters to get to the next stage.

**OPPORTUNITIES**
As more organizations feel the pressure to provide a rapid and flexible response to evolving end-user requirements, they will seek to adopt software tools that support ‘agile’ principles, expanding the addressable market for companies like Onshape.

**THREATS**
Onshape was designed as a full-cloud solution with the goal of addressing key pain points in the design and development process for manufactured products. This is an important differentiation, but other new and established vendors could seek to emulate its approach.