

Lava Drops

Reimagining Guitars As Art Pieces With 3D Creator Xdesign App

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Challenge

Improve the ability to work, collaborate, and communicate with the design and engineering team when members are geographically dispersed.

Solution

Expand its existing SOLIDWORKS for Entrepreneurs solution with the browser-based 3D Creator solution on the **3DEXPERIENCE** cloud-based platform.

Results

Cut design cycles by 30 to 40 percent

Shortened time to market by 20 percent

Reduced development costs by 25 percent

Improved design visualization, collaboration, and communication

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Lithuanian guitar company Lava Drops, founded by Rapolas Gražysto, launched its Kickstarter campaign back in June 2016.

Since then, Lava Drops has been touring the world and showing off its wares to professional musicians. The company has built a customized guitar for Jack White of The White Stripes fame, and the company's founder visited SOLIDWORKS World 2019 with a new guitar designed especially for the event.

Lava Drops' guitars in the Lava Drops range are crafted from a variety of exotic materials and woods for the body, neck and inlays of the instruments. Such exotic materials have included actual pieces of cooled lava (hence the name, Lava Drops). Add to that an aircraft-grade aluminum trim, and you have some very exclusive-looking instruments, which are far removed from the Fender and Gibson clones that have dominated the market for decades. While they are inspired by natural forms, they also give a nod to modern technology.

Did we mention they have lasers on them too? Yes, as an optional extra feature, you can get a laser MIDI controller fitted on your guitar, so you can control a range of effects and noises by manipulating the laser beam with your hand. Cool stuff!

Who doesn't like lasers?

"Lava Drop X, the 3D Creator edition, is based on the usual Lava Drop X model shape, but as it was specially created for SOLIDWORKS World 2019, it had some custom-made options," explained Gražys.

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3D Creator Edition

First up, we wanted to know about the custom guitar that Lava Drops designed for SOLIDWORKS World 2019 (you can see this beauty in Figure 1).



Figure 1. Lava Drop X, a custom job for SOLIDWORKS World 2019. (Image courtesy of Lava Drops.)

“Lava Drop X, the **3D Creator** edition, is based on the usual Lava Drop X model shape, but as it was specially created for SOLIDWORKS World 2019, it had some custom-made options,” explained Gražys.

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“It is a futuristic musical art piece handcrafted using neck-through technology in a combination of Lithuanian Maple, Sapele wood and aluminum contour. These precious materials connect the past and the future and create unimaginable resonance and fascinating sustain.”

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instruments sustain, making this instrument sound very clear. The fingerboard is crafted from Ebony wood. A special aluminum “X” inlay is encrusted into the fingerboard. This custom instrument is painted in the Dassault Systèmes blue color and signed with the 3DEXPERIENCE symbol.”

As you can see from Figure 2, Lava Drops designers aren’t just using SOLIDWORKS for the design, but are also making good use of the 3DEXPERIENCE platform for its product lifecycle management (PLM) needs.

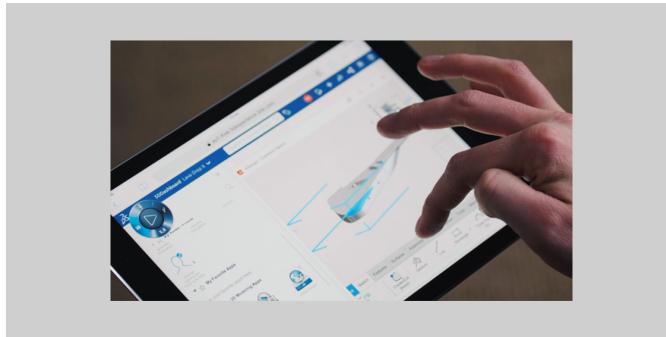


Figure 2. Designing with **3DEXPERIENCE**. (Image courtesy of Lava Drops.)

Jack White III Signature Edition

So, how does a company grow from a Kickstarter campaign to creating a signature series guitar for one of the world’s most renowned guitarists in the space of less than two years?



Figure 3. Jack White, his signature guitar and Rapolas Gražys. (Image courtesy of Lalo Medina, Monotone, Inc.)

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explained Gražys.

“Jack White had a world concert tour last year and he had a concert in Lithuania. I was invited by the organizers to create a special custom gift from all [the] people [of] Lithuania who appreciate Jack’s music. After two months of creating and three months of building this instrument, finally I met Jack and showed him the guitar, the Lava Drop [Jack White III](#).

“He was totally astonished and I was very happy meeting the legend and holding the guitar.”



Figure 4. The Jack White III. (Image courtesy of Lava Drops.)

The Jack White III has been designed all around the number 3, because, according to Lava Drops, it defines most of the aesthetics in the world. Consequently, the company selected three different wood species to craft the instrument, with each coming from three different continents.

Add to that, and you have three boutique vintage-sounding, Haeussel mini-humbuckers, 3mm of aluminum surrounding the sides of the body to boost sustain as well as reinforce the body, and three colors blending into a unique aesthetic.

“

It’s easier and faster to develop design concepts with the 3D Creator xDesign app. ...Because SOLIDWORKS software and the **3DEXPERIENCE** platform work



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manufacturing side, and customers to collaborate from anywhere, at any time, and from any device with a web browser.

Rapolas Gražys

Founder

In addition to Jack White, Gražys has met a whole bunch of other iconic guitar players throughout the whole Lava Drops experience.

“I had privilege of meeting one of my guitar idols who has tried and appreciated—and has said fantastic words about Lava Drops—the one and only guitar legend [Tommy Emmanuel](#).

“It was a great experience meeting him in person and listening to how he shreds the Lava Drop.”

Emmanuel is an Australian acoustic guitarist, known for his finger-style technique that was heavily influenced by Chet Atkins. Indeed, Emmanuel even teamed up with Atkins to create an album together. He has also been voted the best acoustic guitarist on a couple of occasions by Guitar Player magazine.

As well as finding fans of Lava Drops guitars overseas, the luthier and design company is generating some fans on its home turf.

“At the moment, one of the most well-known musicians in Lithuania, [Andrius Mamontovas](#), is playing and using the Lava Drop X model.”



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Future Innovations

So, all seems to be going well for Lava Drops. The company's range is expanding, and it is gaining new fans. So, what is next for the company?

"I am really interested in the new way of using rare materials for musical instruments," said Gražys.

"I have already created the Black Amber Drop guitar that was crafted from 50-million-year-old amber."

You can see a video of Steve Morse (from Deep Purple) test-driving the aforementioned Black Amber Drop guitar in the video below.



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Steve Morse trying the Black Amber Guitar from Lava Guitars crafted from 50 m



“At the moment, I am creating another guitar that will be created from a very, very rare material, and it will be presented I hope this year, as it takes a lot of work to design, create and craft the instrument.”

Mysterious! What could be rarer than amber, we wonder? Well, there are lots of rare materials, but they have to be machinable, so they can be shaped into a guitar.

Dinosaur bone maybe? With a chunk of meteorite machined for the contours? Or how about some million layer Damascus steel? There are a fair few possibilities.

But for now, Gražys isn't saying what the material will be. Some things are best left as a surprise perhaps.

“Just follow Lava Drops social media and subscribe to Lava Drops newsletter,” he says.

“We have a lot of going on there!”

Indeed, they do, and you can follow Lava Drops on Facebook, Instagram and Twitter, or if you'd like to get your hands on one of these instruments, then you can check out the company's range and order one from the Lava Drops website,

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