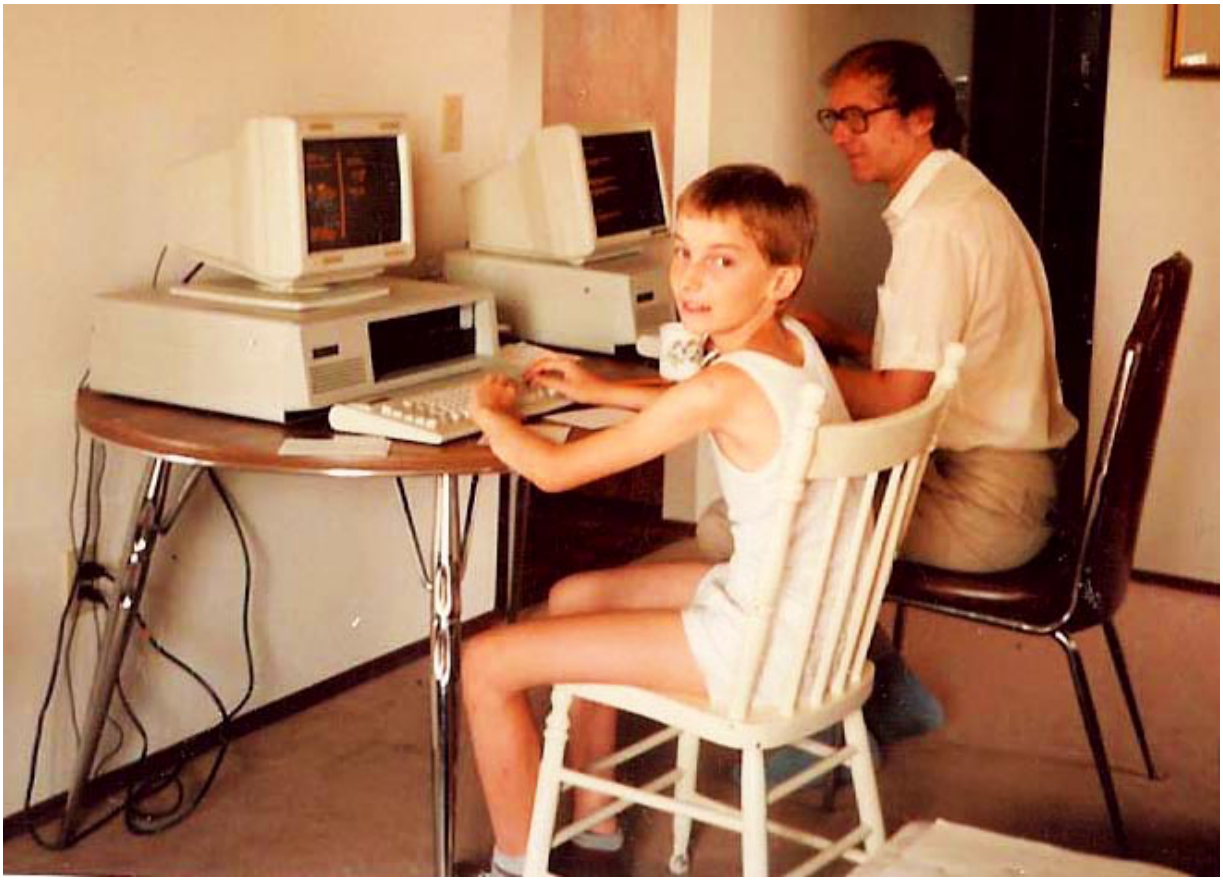
The Rise of BrickLink

The LEGO Group announced in January that it was officially retiring its long-lived LEGO® Digital Designer for fans, replacing it with the fan-empowered digital LEGO brick designer BrickLink Studio.

Why the LEGO Group decided to publicly retire its popular internal creation – now used in the creation of everything from LEGO brick sets to video games and movies – and instead rely on something built on a foundation of fan creation is a tale of two journeys going back decades.



BrickLink founder Dan Jezek and his father.

A key transformative moment in the life of the LEGO brick came in the early '90s when fans began to imagine what it would be like to create digital representations of the LEGO bricks and elements. With the digital brick, there would be no limits to what a person could build, be it a LEGO brick model, a movie or television show created entirely of bricks, or even video games that breathe life into the toy.

That concept of the digital brick started in Switzerland when a man who went by the name of Dent-De-Lion Du Midi convinced a group of friends to band together and work on a

proof-of-concept video that would show what a digital LEGO brick would look like and how it would behave on-screen. That nearly four-minute video – actually titled The LEGO Movie – became a pitch to the LEGO Group for a research project aimed at digitizing the brick and bringing it to games, movies, and future technology that could blend the digital and physical.

Dandi, as he was known to his friends, got the ball rolling in 1993, won over the LEGO Group in 1995, and helped launch Strategic Product Unit Darwin in 1996.

Among SPU Darwin's four divisions was the L3D group, which focused on building a database of LEGO bricks. But the division simply couldn't digitize the company's bricks at a reasonable speed. Creating just two to three digital bricks could take an entire day.

While SPU Darwin was struggling to meet expectations, another division within the LEGO Group – LEGO Media International – started playing around with another take on the digital brick. Specifically, LMI executive producer Rob Smith said he and a team working on video game concepts for the LEGO Group decided to take their own stab at digitizing the LEGO brick in 1996.

The first product to come out of that idea was LEGO Creator, a sandbox building game developed by Superscape and launched on Nov. 11, 1998. The following year, as the LEGO Group struggled with flattening sales and rising operating costs, SPU Darwin was shut down.

Eventually, that project was handed over to another developer – Qube Software – which turned the game into a tool.

The original LEGO Digital Designer hit the LEGO website in July 2003 as a standalone downloadable program that felt more like an experiment than fully backed piece of official LEGO Group software.

Over the following year, the Qube team continued to upgrade and iterate on the program, adding things like online support for creation sharing. By September 2004, LEGO Digital Designer had been downloaded more than a million times.

On August 29, 2005, the LEGO Group announced that, in celebration of the 50th anniversary of its System in Play, it was launching LEGO Factory. Powered by LEGO Digital Designer, LEGO Factory allowed anyone to design a 3D model with digital bricks, and then order the model and have it shipped to their home.

The program was renamed LEGO Design byMe in 2009, and then was shut down in 2012. By then, support of LEGO Digital Designer had been brought in-house. As the fan base for LEGO Digital Designer continued to grow among customers, it also found a fan base internally, among designers.

Soon, the developers behind LDD had created specialized versions for LEGOLAND®, set creators, video game developers, and even Hollywood – eventually those were all

combined into LDD Pro. But as support for LDD grew for internal use, support of LDD Fan diminished.

Today, LDD Pro is the only version of LEGO Digital Designer supported by the LEGO Group. Back when the company started creating spinoffs of LDD, the core version was renamed LDD Fan, but LDD Fan stopped getting official support in 2016. Despite that, one more update hit in 2019, but no more are expected.

The journey for fans and unofficial tools for digital LEGO bricks also started in the '90s and – of course – also with a fan.

Back in 1995, around the same time that Dandi was visiting the LEGO headquarters in Billund, Denmark to pitch the creation of the digital brick, a young Australian man named James Jessiman was struggling with some of the same ideas.

In 1995, he created LDraw, an open standard for use with CAD programs that can be used to create virtual LEGO models and scenes. He shared it with anyone interested for free. James spent the next two years supporting LDraw and using the software to create brick models for anyone who asked.

Then on July 25, 1997, James died unexpectedly of influenza, shortly after his 26th birthday. The growing community of LDraw fans came together after his death to create a website to document and continue James' work with LDraw.

In 2000, another fan creation came to life: BrickBay, soon to be renamed BrickLink. The site was created by Dan Jezek as a way to sell loose LEGO bricks and elements to supplement his income.

Over the next 10 years, the site continued to grow, attracting a huge audience of adult fans of LEGO bricks and adding support for anyone to create a digital store and sell their own LEGO elements and bricks online.

Then, on Sept. 24, 2010, Dan unexpectedly died, leaving his family heartbroken. But his mother, Eliska Jezkova, knew she and Larry Hawthorne, Dan's stepdad, had to continue Dan's legacy and ensure that Bricklink wouldn't just survive in his name, but thrive.

In 2013, Jezkova announced she was selling the site to Jung-ju "Jay" Kim, founder of Nexon. Over those three years, the site jumped from 50 million visitors to 144 million.

Kim promised to continue to support and build out the site. Then, in 2016, BrickLink rolled out the biggest change to come to the website: Stud.IO, a robust LEGO digital building program built on the bones of fan creation LDraw.

These two storied histories – both starting in the mid-'90s and continuing through today – came together in January when the LEGO Group announced that BrickLink Studio would replace LEGO Digital Designer as the official public virtual LEGO building software.

While LEGO Digital Designer will still function, it will no longer be available to download, and the LEGO Group is encouraging fans to download and switch over to BrickLink Studio, which can import LDD files.

From the beginning, the LEGO Group was focused on making a digital building tool that would be accessible for children using a LEGO brick simulation. While the early fan community work remains impressive, it always seemed more focused on the adult fan community.

Of course, there were several other, lesser issues including the consistency of fan-created tools, quality control, the need for the company to have some semblance of control over a tool so important to its digital future, as well as the issue of the LEGO Group having to protect the intellectual property rights of the bricks, the technology for simulating them on a screen, and how one would transfer them online.

Jezkova, who remains a passionate ambassador of BrickLink, Studio, and adult fans of LEGO bricks, said the decision to not just embrace the fan community that her son created, but also work alongside it, is a reminder of her son's lasting legacy.

"I lost my child," she said, "but I got a million of these kids around the world, a lot like a Mother Goose."

Explore more ...

In order of appearance:

LDraw – Official website

BrickLink – Official website

Dan Jezek memorial page – Official website

Transcript

Bits N' Bricks Season 5, Episode 47: The Rise of BrickLink
Jan. 31, 2022 • 1:10:21

Prologue – 00:00

Announcer

Please note that this episode of Bits N' Bricks contains instances of misuse of the LEGO® trademark, which must always be used as an adjective and never a noun. As a reminder, it is never appropriate to refer to the company that designs and produces LEGO brand products as LEGO. Rather, the correct name for the company overall is the LEGO Group.

Announcer

I hope that was severe enough. Was it severe enough?

Studio Engineer

Yeah, that was great, Ben. We got it.

Announcer

Alright. On with the show.

(Child's voice announcing Bits N' Bricks)

Bits N' Bricks: Introduction – 00:39

Ethan Vincent

Welcome to Bits N' Bricks, a podcast about all things LEGO Games. I'm Ethan Vincent.

Brian Crecente

And I'm Brian Crecente. Together, we look back at the rich 25-year history of LEGO Games, chat with early developers and season studios who have all tackled the creation of video games for one of the most popular and respected toy companies in the world: the LEGO Group.

(Bits N' Bricks theme music)

Ethan Vincent

Hey, Brian. It's been a while.

Brian Crecente

You know, I thought we were going to have a bit more of a break before we dove straight back into things.

Ethan Vincent

Well, we're not returning with another season of weekly shows. Instead, this is a special spin-off, a special one-off, something triggered by a pretty amazing announcement.

Brian Crecente

You know, that's true. And while I'm sure we'll be doing more episodes this year, this one does indeed have ties to some pretty huge news.

Ethan Vincent

Earlier this month, the LEGO Group announced that LEGO Digital Designer, a piece of software that allows anyone to create digital models with digital bricks on their computer, would be essentially retiring. In its place, the LEGO Group is suggesting that fans download BrickLink Studio.

Brian Crecente

And that's a huge deal, Ethan.

Ethan Vincent

Yeah.

Brian Crecente

LEGO Digital Designer can trace its roots back to the mid '90s and the company's first interest in the digital brick. It's a tool that has expanded over the decades to help give life to not just fan creations, but everything from video games to the LEGO Movie™. And while it will still be supported for internal use, the fan version of the software is essentially being mothballed. Today's episode will trace the long history of LEGO Digital Designer and also tell the story of how two young fans of LEGO bricks with a shared love of computers, but no connection to one another, made distinct software programs that would come together years later to give life to BrickLink Studio.

(Short tune break)

Ethan Vincent

These two extraordinary tales touch on the LEGO Group's early skunkwork experiments in digitization, the birth of a fundamental open standard for digital model creation, a thriving community marketplace for millions, and a mother's struggle to maintain her son's legacy.

Brian Crecente

There's so much to talk about here that we're going to present all of this as two separate stories, both tracing along the decades from the '90s to now. One following a thriving creative fan community, and the other following the work of external contractors and the LEGO Group's talented designers and developers, until the two stories merge under the umbrella of the company. And we decided to do something a little different with this episode because it is essentially two intertwined stories. Ethan will be talking about the LEGO Group's own history of digital bricks that started in 1995 and culminated with LEGO Digital Designer. I'll be walking you through the history of LDraw, BrickLink, and BrickLink Studio.

Ethan Vincent

But don't worry, we're both still in our studios listening in and ready to chat about all of this at the end of this special double episode. So let's get started.

(Tune break)

Chapter 1: SPU Darwin and LEGO® Creator – 03:47

Ethan Vincent

In 1958, the LEGO Group transformed blobs of plastic into its signature brick, a creation that transcends form and factor, giving life to the creative spark found in children and adults alike. That creation lives on today through LEGO bricks and the powerful System in Play, which means that all LEGO elements can fit together, be used in different ways to create and build, not just with the physical, but also with digital versions of that original brick. A key transformative moment in the life of the LEGO brick came in the early '90s when fans began to imagine what it would be like to create digital representations of the LEGO bricks and elements. With the digital brick, there would be no limits to what a person could build, be it a LEGO brick model, a movie, or television show created entirely of bricks, or even video games that breathed life into the toy. That concept of the digital brick started in Switzerland when a man who went by the name of Dent-de-Lion Du Midi convinced a group of friends to band together and work on a proof of concept video that would show what a digital LEGO brick would look like and how it would behave on screen.

(Music from THE LEGO Movie – 1993)

Ethan Vincent

That nearly four-minute video – actually titled The LEGO Movie – became a pitch to the LEGO Group for a research project aimed at digitizing the brick and bringing it to games, movies, and future technology that could blend the digital and physical. Dandi, as he was known to his friends, got the ball rolling in 1993, won over the LEGO Group in 1995, and helped launch Strategic Product Unit Darwin in 1996. Among SPU Darwin's four divisions was the L3D Group, which focused on building a database of LEGO bricks. But the division simply couldn't digitize the company's bricks at a reasonable speed. Creating just two or three digital bricks could take an entire day.

Tormod Askildsen

Darwin was very much about digital LEGO elements and digital building.

Ethan Vincent

This is Tormod Askildsen, head of Adult Fans of LEGO Community Engagement or AFOL, the acronym A-F-O-L.

Tormod Askildsen

You know, I think that is the first time we started to actually think about, you know, that LEGO bricks could also have a digital representation, and we could actually, you know, put them together and create models and designs digitally, but it required an enormous amount of computer power. You know, back then I remember someone told me that the highest concentration in the northern part of Europe of Silicon Graphics computers was actually in Billund at that time where we experimented, you know, with digital bricks and digital building.

Ethan Vincent

While SPU Darwin was struggling to meet expectations, another division within the LEGO Group, LEGO Media International, started playing around with another take on the digital brick. Specifically, LMI Executive Producer Rob Smith said he and a team working on video game concepts for the LEGO Group decided to take their own stab at digitizing the LEGO brick in 1996. The first product to come out of the idea was LEGO Creator, a sandbox building game developed by Superscape, and launched on Nov. 11, 1998. The following year, as the LEGO Group struggled with flattening sales and rising operational costs, SPU Darwin was shut down, but LEGO Creator and its core idea of delivering digital LEGO bricks to fans lived on. The initial idea for the LEGO Creator concept was to create future games based on different LEGO theme sets.

(Commercial for LEGO Creator: Knights' Kingdom

Narrator

Once upon a time there was a castle (explosion sound) and then there wasn't. Now you can make history your way in LEGO Creator: Knights' Kingdom)

Ethan Vincent

In 2000, Superscape released LEGO Creator: Knights' Kingdom, a video game based on the LEGO Group's Knights' Kingdom physical product line. And then the next year, the studio released LEGO Creator: Harry Potter™. Around that time, the LEGO Group decided to shift the LEGO Creator franchise over to a different developer, Qube Software. While the first product of this new partnership was LEGO Creator: Harry Potter and the Chamber of Secrets, Qube CEO Servan Keondjian said that there was also a significant second part to their contract.

Servan Keondjian

There was always a plan when we started Creator that we knew we were building something bigger. and Creator was a way of us putting together some of the essential technologies and pieces for the underlying connectivity simulation that was the LEGO SDK. Even on a contractual level, when we actually first signed up Creator, we actually had it in two pieces. For the LEGO Group, we were building the LEGO SDK, that was one contract, and there was a second contract for LEGO Creator, which was the game and the build experience. So they were on separate budgets, and within my company, I even had slightly separate teams, though there was quite a lot of overlap. So we knew from the outset that we were building something bigger.

Ethan Vincent

Where Harry Potter and the Chamber of Secrets was a video game with building elements, much like the previous Creator games, the second project, which ran parallel to the first, focused on building a base system for presenting LEGO bricks in digital form.

Servan Keondjian

We had a more engineering-focused team on what we called the LEGO SDK. It was a module that was purely for simulating how all the LEGO bricks connected. And LEGO Creator was built on top of that. So LEGO Creator was like the game world – the game itself, all the graphics for the characters in the game that were in it – but it used the LEGO SDK to simulate how bricks would click together, so that was a separate software module. And we built that so that LEGO Group could use it in-house for other projects.

Chapter 2: The Idea of LEGO Digital Designer – 10:00

Ethan Vincent

Unfortunately, around the time that LEGO Creator: Harry Potter and the Chamber of Secrets came out in 2002, the LEGO Group was undergoing some transitions, so Servan said he had to win the LEGO Group back over to the idea of LEGO Digital Designer. The idea was bouncing around between different groups within the company, so Servan took multiple trips to the LEGO Group's headquarters in Billund, trying to find the right person to

talk to. Finally, he connected with a team that shared his vision. And with the support of Anders Thorbjørn Jensen, Olga Timcenko, Rene Schalburg, and Ronny Scherer, the project got back on track. Initially, Servan said, LEGO Digital Designer had its own life. It was meant to be a standalone product without any ties to sales or marketing.

Servan Keondjian

We wanted to build a pure LEGO brick builder because that was something with the LEGO Creator product: We had all these pulls in different directions. It had to be a game, but not a game, but it had a really good build part to it. LEGO Arena and then LDD gave us this chance to really be a pure, easy-to-use building application that worked with LEGO bricks. It was all about just proving that you could really build and it would really be fun, rather than a hardcore CAD experience. It needed to be fun and needed to be super slick and easy.

(Tune break)

Ethan Vincent

While working on LEGO Digital Designer, the group at Qube tried to stick to a couple of basic guiding principles.

Servan Keondjian

It was basically the thing I kept going on about when we were designing it – to us in-house, and all the time to keep me sane – to what which direction we're going is: Imagine pouring a bunch of bricks on the floor, and you want to build with that, physically, How can we improve that experience? How can we make that easier to do? So our goal was just to make it very easy to find the bricks you wanted, very intuitive to know the brick you were after and then to place it. Yeah, we were iterating on the things that worked in Creator, stripping out everything that was Harry Potter brand, making it more and more clean, pure LEGO brick app. So in terms of the graphical design, we got to just simplify, simplify in every way we could. And then it was all about the brick selection, really good buckets for the bricks that they would all go into that really made sense, easy selection of those, and then how we'd show how much of each brick you have and all of that stuff nicely in the UI. And then just the baseplate setting and then dropping onto the baseplate, so it would snap onto that.

(Short tune break)

Ethan Vincent

For the first release of LEGO Digital Designer, the developers set out to recreate a subset of elements and bricks – that included those found in the latest LEGO Creator game minus what was connected to Harry Potter – and they ended up with about 500 elements in that first release. While the developers had quite a number of ideas in mind for the future of

LDD, they limited the scope of the original release, both because of its relatively small budget, and because they wanted to create something that proved that the simple act of building with digital LEGO bricks could be fun. The original LEGO Digital Designer hit the LEGO website in July 2003 as a standalone, downloadable program that felt more like an experiment than a fully backed piece of official LEGO Group software. Over the following year, the Qube team continued to upgrade and iterate on the program, adding things like online support for creation sharing. By September 2004, LEGO Digital Designer had been downloaded more than a million times, but the biggest addition to LEGO Digital Designer was yet to come.

Chapter 3: James Jessiman and LDraw.org – 13:53

Brian Crecente

Back in 1995, around the same time that Dandi was visiting the LEGO headquarters in Billund, Denmark to pitch the creation of the digital brick, a young Australian man named James Jessiman was struggling with some of the same ideas. James was born in Wagga Wagga, New South Wales in Australia, and at a very early age was introduced to both LEGO sets and computers. Around the time he was going to college, he decided to purchase a business that built and seviced computers. Shortly after that, he started playing around with ways to computer-generate LEGO brick building. In 1995, he created LDraw, an open standard for use with CAD programs that could be used to create virtual LEGO models and scenes. He shared it for free with anyone interested. James spent the next two years supporting LDraw and using the software to create brick models for anyone who asked. Then, on July 25, 1997, James died unexpectedly of influenza shortly after his 26th birthday. The growing community of LDraw fans came together after his death to create a website to document and continue James' work with LDraw. Tim Courtney was among those who helped bring the LDraw website to life. He originally got interested in the digital brick through a news group called rec.toys.LEGO, back in the internet's early days.

Tim Courtney

If you think about that time in history, it was before digital cameras were prevalent. So, you had LEGO fans who wanted to share their creations with each other, and there really wasn't an efficient way to do. So, you would take a photo of it and go and get that developed and scan that in and upload that, and those files would be very large. And there was a community, a collaborative project around that time, between, you know, a handful, probably, if I'm remembering, you know, several dozen active people on this proto-forum called rec.toys.LEGO, who wanted to recreate one of the original LEGO idea books. We needed an efficient way to describe, you know, really show the LEGO models and then create building instructions of them. There were several, kind of, 3D building tools that people were making in, like, a freeware or shareware software. And one of those was called LDraw. The file format is it's a text file with some code in the text file. He created a software for DOS that was a viewer, and then another one that was an editor, and you

could use your keyboard and you could pull up these files of LEGO bricks, and you can move them around on the screen, and then you could change the view and make sure that in 3D they were all aligned. James, unfortunately, had a brief illness and he passed away in '97. And, for us, that was like the first time that someone we had a relationship with on the internet had passed away – for many of us. And, so that was really interesting because you build up a rapport with people just over email, you know, and just over forum posts, so we were all avid users of James' LDraw, and we wanted to remember our friend, and we also wanted to keep using the software. So the community of users really organized around the software. We didn't have the source code, but people would write tools that would interpret the LDraw files and add functionality to that. Michael Lachmann developed MLCad as a Windows LDraw editor. So there was this entire ecosystem around this LDraw file format and library of parts. And really, it was the library of parts and the community members who diligently measured and captured and encoded these LEGO bricks. And the community process that emerged, where the parts authors would submit them to a committee of their peers for review, and then inclusion in what became these official parts updates, that eventually would build out and fill out the entire, or close to, the entire library of available LEGO pieces at the time and then continued to be maintained and expanded as the LEGO Group would, you know, each year, come out with more and more new pieces. So you had a completely community-originated 3D CAD system to describe LEGO bricks. And we did that all independently. We did that all without the LEGO Group. In fact, it was maybe a legal gray area, right? You know, we put the standard trademark disclaimers up, occasionally had dialogue with legal representatives from the LEGO Group about, you know, how we were using the brick and how we were using the trademarks. But largely, it was a solution to a need that the community had to document models and to share those models with each other, or to build with a limitless brick palette, that the community solved on its own and became its own ecosystem.

Brian Crecente

In 2000, Tim and two others wrote a book called Virtual LEGO, documenting how to use LDraw and MLCad to make LEGO brick creations in digital form.

Tim Courtney

So it's quite a robust building instruction generation tool, and now even like page layout tool, but at the time it was simply the sort of path from learning what is virtual LEGO, to you know, how do I start to build a basic model, a more advanced model? How do I deal with taking entire sub assemblies of models and rotating them and – or instantiating them? And how can I create really nice rendered scenes? And how can I create building instructions? And that was what Virtual LEGO was about.

Brian Crecente

As Tim continued to work with LDraw, he formed friendships with some of the folks at the LEGO Group, and that eventually led to a job at the company. Initially, Tim worked with the

team developing LEGO CUUSOO, the predecessor to LEGO Ideas. Tim later joined the company and worked to build out the community and engagement model used in LEGO Ideas.

Chapter 4: LEGO Factory and LDD Handoff – 20:08

Ethan Vincent

Meanwhile, the LEGO Group was continuing its work on LEGO Digital Designer. On August 29, 2005, the LEGO Group announced that, in celebration of the 50th anniversary of its System in Play, it was launching LEGO Factory. Powered by LEGO Digital Designer, LEGO Factory would allow anyone to design a 3D model with digital bricks, and then order the model and have it shipped to their home. This marriage of digital design and physical models was a key conceit of Servan's initial idea for LDD.

Servan Keondjian

Like I said, it was an idea I'd been pitching to them in the early stages where we could go with it. It was only later that Ronny came back to me with a much more formed idea of what LEGO Factory actually was. So he had obviously run it through, and they'd formed it into something they wanted to create, and then they came back to us and said, "This is how we want LDD to fit into it." I remember the excitement was about having the feature that let you put a picture on the front of the box that you took. So we built that into LDD, and that was when it really was crystallized in everyone's heads, like everyone's going to be able to make their own LEGO box and get it sent to them. I don't know if they kept that feature, but I was very excited when we did it.

(Short tune break)

Ethan Vincent

Tormod got involved with LEGO Factory about a year after its launch, and was keenly aware of the LEGO Group's big plans for the service.

Tormod Askildsen

What we wanted to do was to enable consumers to design their own LEGO sets. So using LDD, you could actually design a model. You could build it to be digital bricks. Then you could submit it to the LEGO Group, and we would then assemble all the bricks, and we would pack it in a set and send it to you. So you had your own, actually LEGO model as a LEGO set. It didn't work out so well, actually, because we had big visions of creating a marketplace where consumers could create designs, and all the consumers could, you know, buy those designs. But the level of the quality of the designs, stability in designs, you know, were to a large degree not up to a level that consumers would enjoy if they bought someone else's designs.

Ethan Vincent

The team at Qube continued their work on LEGO Digital Designer, now seemingly tied inexorably to LEGO Factory, for another year or so before the LEGO Group started talking about bringing the work and the software in-house. But Servan said there was some confusion at Qube about what exactly that meant.

Servan Keondjian

We were looking at ways how we could work together closer. And I think we didn't talk very much about it, but there was talk about could there be any potential for an acquisition, and we weren't really interested in being bought. We were looking in any types of partnerships that could emerge, and I don't think we found a good fit. The LEGO Group wanted to bring it in-house. So that was the next stage. How could we support that happening? We didn't know that. It was not communicated clearly. What we heard was they were trying to bring up an in-house team, and they wanted our help to show them how it was done. So that's how we heard it.

Ethan Vincent

It took months, Servan said, before Qube realized that this wasn't meant to be a joint effort moving forward, but rather one that removed the studio from the project completely.

Servan Keondjian

We were told about the in-house team spinning up. We were asked to review their code. And I left it with my team to do a review of it, and they did quite a negative review of it. I was quite used to – one of our ways of working internally, we were quite direct about how things were in people's code. And it's something that we always learn to receive lots and lots of criticism about our code, so we could always improve it. So we did quite a hardcore, critical review of it. But in our in-house style that was meant to be constructive. We pointed out lots of things that we thought could be improved. And it wasn't taken that way, and I think it accelerated the two teams not working together.

(Short tune plays)

Servan Keondjian

It was a little difficult as we were, you know, you get attached to stuff, and you get attached to the vision that you've put into it. So, I don't think we handled it in the best possible way. We were a little upset, and some of the guys on the team were quite upset about it – especially the guys who had really put a lot of hard work to create some of the core stuff. So they didn't want to transition it to an internal team in LEGO. They wanted to hold onto some of the good technology that we had in there. So it was difficult for me because I wanted to work with LEGO, I wanted to support the transition, and I cared about the people that I was working with that put in so many years of hard work. That was a hard time.

Ethan Vincent

Tue Jakobsen, who in the '90s worked with SPU Darwin returned to the LEGO Group in 2006 to oversee the process of handing off LEGO Digital Designer from Qube software to the LEGO Group.

Tue Jakobsen

Qube Soft had just released, I think, the 1.5 version, and we're working on a 1.6. And the reason I came in was that we had a few developers that I'd worked with before, that thought they could create a better building engine underneath. So basically, they had challenged the way Qube Soft had created the first versions and were allowed to try to create another LEGO Digital Designer, basically, as a competition to the existing one. And it turned out that it was a better engine, so it scaled a lot better, it could build bigger models and things like that. So I think Qube Soft, they released version 1.6 while we were working on the next one, and then we kind of released 2.0, so it was a new version with a new engine in it.

Ethan Vincent

Tue said that like Qube Software did when it took over the LEGO Creator games from Superscape, the LEGO Group decided to start from scratch when it began work on LEGO Digital Designer 2.0. While Tue said he believed the decision to bring it in-house was driven by a desire to use newer technology to rebuild the basic engine that ran LDD, Servan has a different opinion.

Servan Keondjian

I think it was too important to IP. I don't know this, but I'm sure it's the decision LEGO Group management made. I would have made it if I was a manager of a big company, that having the knowledge for how this is done outside of the company, you know, the LEGO Group as a company is about building with bricks, it doesn't really make sense that it doesn't know how you do the building with bricks in the digital world.

Chapter 5: Dan Jezek, BrickBay and BrickLink – 27:10

Brian Crecente

A few years before LEGO Creator made the transition to LEGO Digital Designer and fueled the launch of LEGO Factory, an adult fan of LEGO bricks in Hawaii was just getting started on a community-powered tool that would go on to have a massive impact on the LEGO Group and its thriving fan community. BrickLink started its life as Brickbay on June 19, 2000, the product of a young LEGO brick fan looking for a way to buy and sell LEGO bricks online. Dan Jezec was born in Prague in 1977. His mother, Eliska Jezkova, said her son got his first LEGO set after his father, a noted mathematician there, received a special coupon from the

then-communist government, that allowed them to buy one of the hard-to-find toys along with the fuel coupon to go pick it up.

Eliska Jezkova

His first LEGO set, he got Firestation, the 1981 set. And of course with his small hands he was putting this together for, I mean, for a few minutes. And then every year for the Christmas, some way, you know, we got a LEGO box, a different set. And this is how his love for LEGO bricks started. And how he grew up, he was very sick because he was overdosed on antibiotics and not enough medication. So anyway, he was a sickly kid, so he spent lots of time putting his bricks together. And finally, his health didn't improve, so when they opened the border in 1990, you know, his father find a job in UH, in University of Hawaii, and we left. So to improve basically his health and give him a chance to live. So that was the whole story how we move from Europe to the United States.

(Tune plays)

Brian Crecente

The family wasn't able to bring much with them on their 1990 move to Hawaii, but they did bring Dan's LEGO sets and the family computer. Dan's father later returned to the Czech Republic, but Dan and Eliska stayed in Hawaii, sometimes struggling to make ends meet because Eliska, who had a law degree, wasn't able to practice law in Hawaii. After graduating high school in 1996, Dan studied Computer Science at the University of Hawaii. While working at a local bank, Dan supplemented his income by selling off some of his LEGO brick collection. At the time, he was also learning web design and realized other people might want an easy way to sell or buy individual bricks.

Eliska Jezkova

And he said, you know, maybe I can create something similar to open this market to the people because it had to say, but before BrickLink, you know, the LEGO Group they sold the sets, right? And then when people want to build up something that wasn't enough the bricks to build, not enough material, right? Then I remember Dan said, "I would like to build my own Trabant" – you know, we had a plastic car – but there was not enough. So he said, maybe when we can, you know, put these bricks together, maybe people get building material, and they can do something similar, like eBay, but people can have access to the LEGO bricks. First, it was Dan's web and then he created a big one and asked the other people, you know, if would like to join him. So people ask him, they can open a store under this umbrella. So he started call it Brickbay. It was brick, like a brick, LEGO brick, and bay because we lived by the Kailua Bay, and he walked his dog, Tori, you know, around the bay, so this is what he put it together – Brickbay.

Brian Crecente

Brickbay quickly built up a following, attracting the attention of not just LEGO brick fans and collectors, but also eBay, which sent a threatening letter to Dan over the site's name. So in 2002, Dan renamed the website to BrickLink, a name that his mother created to underscore the link people found with one another through the site – not just the connection of LEGO brick ownership, but a friendship.

Eliska Jezkova

So, BrickLink grow, you know, during the years, and people participated with ideas, and Dan was open all the different ideas and implemented, you know, really fast. So he worked 18 hours a day for 10 years and no break. And I sat next to him. I have seen him suffer, be exhausted. But his love, you know, for this enterprise for this, you know, was tremendous, right? And so BrickLink grew and more and more people participated. He implemented and built up basically, and develop international monetary exchange engine to allow the buyer and seller to trade the bricks or sets in their own currency. You know, it was automatically exchanged, you know, in a dollar. So, and it was upgraded every few minutes. So it was basically a revolutionary, and it open, I mean, it opened for the thread and BrickLink started skyrocketing because it was open anybody, anybody in South Africa could buy something from the Stockholm, right? And either way, it was exchange. I mean, it was revolutionary. And I remember the evening, you know, he worked weeks and weeks to build this engine. And then he was testing it. And then he came and we sit together and he said, "Mom, you know, in a certain time it was around a midnight it should start working." And so we wait, wait and he check it and jump and say, "Mom, it's working – this will be big!" And I remember, like today, and he was right so I think it was very interesting point in history of the BrickLink.

(Brief tune plays)

Brian Crecente

On Sept. 24, 2010, Dan unexpectedly died, leaving his family heartbroken. But Eliska knew she and Larry Hawthorn, Dan's stepdad, had to continue Dan's legacy and ensure that BrickLink wouldn't just survive in his name, but thrive.

Eliska Jezkova

I decided, I said, "Over my dead body. I will do anything possible, in my life, if it's possible to save this lab for the rest of the world because he worked so hard and it benefits so many people, not just with the participate to bring the joy, but livelihood." So many people made a living because the BrickLink, right? So, so many people count on BrickLink so I carry as a duty I said, "I will save it." I didn't know how, but I said, "OK, with the help of the people and God, you know, we will do it." So this started our journey. And we didn't have really too much knowledge about how to run the web, because we are not basically IT people, but we did our best. So we asked Eric Smith who was hosting our web if you join

us, and we started on BrickLink for three years. I can say that I was the soul who really, really want to save it, but because I'm a people's person, so I'm not basically IT, I know nothing about it or just a minimum. And I was a brick, you know, the LEGO brick lover what I did with Dan, right? And I have to give a big credit to Larry because Larry became a general manager, but basically, he was sitting in front of the computer 24 hours a day, when we went for a few hours to sleep. He didn't leave a house for three years. And there was not, how I can say, after Dan passed away, AFOL around the world stick with me, OK? And they supported us. And I think with this tremendous support of the LEGO community, we were able to save it, but there was lots of intention also destroy the BrickLink, right, from inside and outside.

Brian Crecente

Over the following years, the site continued to grow with each seller in the international marketplace operating as an independent store able to dictate its own business decisions, though it still had to follow the site's rules. In the summer of 2013, for the first time since taking over management of the site, Eliska wrote to the community on BrickLink, thanking them for sticking around. "The last three years," she wrote "have been a very personal journey for me." About a week later, she wrote a second letter, this time spelling out how much the site had grown, jumping from 50 million visitors in 2010 to 144 million visitors in 2013. She also announced she was stepping down as CEO, and that Jung-Ju Jay Kim, founder of Nexon, the largest gaming company in South Korea, was buying the site. Eliska said that passing the torch to new leadership was the right thing to do because it ensured BrickLink's continued growth. Jay, for his part, noted that he had been a fan of LEGO bricks for 40 years and an avid user of BrickLink. He promised that he would upgrade the website to make it more stable, secure, and user-friendly.

Eliska Jezkova

BrickLink grows so much that I realized, we realized, that we cannot keep it anymore because we don't have enough resources. And no matter how much your heart is inside, you just cannot do it. So we accepted Jay Kim's offer to take over the BrickLink, with lots of written agreement that we will be still part of it. And I want to be, you know, I want to be an ambassador of the goodwill to spread the idea of BrickLink around the world.

Brian Crecente

As Eliska and Larry traveled the world as ambassadors for their son's creation, work continued on BrickLink. Three years after the purchase, in 2016, the Nexon-backed BrickLink rolled out the biggest change to come to the website. Studio, also known as Stud.Io was a robust LEGO digital building program built on the bones of fan-creation LDraw.

Chapter 6: LDD 2.0 and Design ByMe – 37:34

Ethan Vincent

And that brings us back to the history of the LEGO Group's LEGO Digital Designer. LEGO Digital Designer. 2.0 was released in 2007, seemingly as the latest iteration of Qube's original software, but it was in fact, the first version of LDD created in-house by the LEGO Group's own team. Tue said that support of the title continued to build on the same core concepts and mechanics, much like Qube was doing.

Tue Jakobsen

So basically, there was – we were generally working on usability, trying to make it easier to use, figure out exactly what kind of tools you should have in order to build, so things like hinges, and we have some special tools called hinge align where you could – when you're building triangles, it can be hard to get the angles right, so you're trying to use the physics engine to drag everything in place. Those kinds of things. But we also looked a bit into automatically generating building instructions. As this was a piece of software that should – basically, it should end up in a full box, so to speak. So you should have all of the bricks, you had your model, you had everything in your box. You would also expect there to be some sort of building guide, if not necessarily a building instruction. And at the beginning, it was basically just stacking bricks and hoping that if we just went from the bottom of the model, everything was OK. But later on, we tried to adapt some algorithm saying, oh, we should test if a brick can be actually added in this way and then trying to build a building instruction automatically that way.

Ethan Vincent

At the same time, the LEGO Factory program was evolving. On August 31, 2009, the LEGO Group announced that LEGO Factory would become LEGO Design byME by October 1. That change brought with it higher quality box designs, an increase in the number of digital bricks supported from 950 to 1,481, and the release of LEGO Digital Designer 3.0. Support for ordering the creations made in LEGO Digital Designer in physical form ended in January 2012, when the LEGO Group announced it would be shutting down Design byME. The LEGO Group noted that while the concept attracted several million people each year to LDD to design MOCs – or My Own Creations, an acronym for fan-created LEGO brick models – Design byME struggled to live up to the quality standards for a LEGO-branded service. While that connection to physical models disappeared in 2012, LEGO Digital Designer didn't just survive that loss, it thrived. As the LEGO Group and developers like Tue were focused on updating LEGO Digital Designer for use by fans of LEGO bricks, they soon came to realize that there was a desire to use the software internally as well.

Tue Jakobsen

I think the first different version we made was for LEGOLAND®. I can't remember exactly how it was created, I guess it must have been the – in Billund, we were working in Billund,

and in Billund, LEGOLAND had what they call a model shop that was basically in an area where they're building all of the models that goes into Billund LEGOLAND. And one of the people in there was using LEGO Digital Designer, reached out to us and asked if it woud be possible for us to create a version that was more tailored towards what they needed. So we started looking into what kind of special needs they had, they were working with models that were a lot bigger, for instance. And then we started developing a version of LEGO Digital Designer for them.

Ethan Vincent

The designers at LEGOLAND used the special version of LDD to design some of the huge models found at the theme park. Soon, others at the LEGO Group were requesting special versions of the software to use internally.

Tue Jakobsen

Yeah, so the next one was actually when we started to create the first LEGO movie.

(Excerpt from THE LEGO MOVIE (2014)
Emmet
"I'm so pumped up!"
Everything is Awesome song)

Tue Jakobsen

When they started doing the movie, they figured out that they had to build all of these landscapes and all of these models that should move around. And so for the first LEGO movie, Animal Logic had a group of 30 people sitting for half a year in our software, building LEGO models. They were working in a standard 3D modeling software to model all of their scenes. And if they had to do that, where it looked like LEGO bricks, they would basically have to recreate all of the bricks, and they knew that we had these bricks already, so perhaps we could create some software or we had some software that they could use. So we looked into their needs and how that would fit with the existing pieces of software that we had and found out that Digital Designer was pretty well suited for that, except that they had a specific movie production pipeline where they are maturing different parts of a scene in different orders, and all of this was done, basically, with a lot of scripting. So it would be really helpful for them if they could script a lot of the things in the application, not so much when you're building, but when you have created the model, how it's then flowing into the rest of their process. So we created a version of LEGO Digital Designer that was tailored more towards them and towards their needs of scripting and fitting it into a movie production. And that became the version we call LDD Hollywood. LDD Hollywood was pretty well-suited for most of what they needed, so we added a few features and then it worked for both the movie production and for the game production. That version is still called Hollywood, but I don't think we're developing that anymore. We started creating LDD Pro internally at the LEGO Group at some point along the way. And then these old

versions, LDD Hollywood and LDD LEGOLAND, kind of became obsolete. So out of LDD Pro, we created what is now called LDD Partner that is basically an application being used by all of the partners we're working with.

Ethan Vincent

Today, LDD Pro is the only version of LEGO Digital Designer supported by the LEGO Group. Back when the company started creating spinoffs of LDD, the core version was renamed LDD Fan, but LDD Fan stopped getting official support in 2016. Despite that, one more update hit in 2019, but no more are expected.

Tue Jakobsen

The software as such we haven't done huge changes to it from, I would actually say back in 2012, or something like that. We did update bricks once or twice a year for a while after that. But I would say five or six years ago, we stopped doing this updating automatically. There was a few security updates we had to do because of some security breaches in some of the libraries we were using. And then we had some communication to a backend that we closed down and basically stopped updating it some years ago. I can't remember if it was two or three or four years ago – something like that. I think there was a lot of different reasons that we stopped updating it. So part of it was that we wanted to focus on LDD Professional because that was basically we saw the future of building levels, that was what was needed, mostly internally at the LEGO Group, so that was the place where it was easiest to get funding to do anyway. And then, at the same time, I think Studio started popping up, and fans started using that and we didn't feel that bad about not having a software solution for them.

(Tune plays)

Chapter 7: Stud.IO Software – 45:09

Brian Crecente

Now let's look back at BrickLink and its investment in Studio, a software tool that outwardly was very similar to LEGO Digital Designer. Tim Courtney notes that after Nexon on founder Jay Kim purchased BrickLink in 2013, the company hired a team of professional software engineers and user interface designers to work on the site. While their initial work focused on the website marketplace, soon they were also working on their own tool for recreating the LEGO brick in digital form. Because they had access to a massive pool of LEGO brick fans and insight into buying habits and how people were using bricks, they were able to design around real-world use cases.

Tim Courtney

They really were able to come at a LEGO CAD tool –

Brian Crecente

This is Tim Courtney speaking.

Tim Courtney

– from a first principles approach, with a professional team, and also with a user base that was adults, where LEGO Digital Designer originated out of the LEGO Group and their primary target market is kids. And so of course, they're going to build a tool that's really user-friendly, that's easy for people of all skill levels to pick up, and may even be limited in some functionality for the sake of simplicity. If you look at what BrickLink did, BrickLink was able to draw on the entire history of the LDraw community and AFOL community that really overlapped with their user base of people buying and selling bricks on BrickLink.

(Tune plays)

Brian Crecente

Junam Kim, head of engineering at BrickLink, said he was brought on shortly after the purchase of the website.

Junam Kim

To understand the background, you need to know that Jay Kim, the former owner of the BrickLink, was also an owner of the big online game company. So he had lots of resource on building online games. And because of that background, he wanted to have some digital platform in the BrickLink as well. And he recruited some people to build that platform. He wanted to expand the whole experience, not just from the physical world, but to the virtual world. So we have strengths in building digital platform at that moment, so we thought that that would be a good opportunity for us. I mean, in the beginning the goal was simple. We tried to build something new, which is like LDD at that moment, but soon we realized that there's lots of opportunity if we connect those digital platform to our BrickLink because it's a virtual world, but we know that the people want to realize those sets once they build their MOC digitally. Then soon they want to build those MOCs, you know, physical world as well, so there's a very obvious connection between those two. We try to focus on connecting those two and let them help to realize their builds.

Brian Crecente

The BrickLink design team's answer to LEGO Digital Designer, software that had now been out for more than 10 years, was to build something on top of an even older set of tools – LDraw, which Tim said, already had an extensive parts library and proven format.

Tim Courtney

I applaud BrickLink for for making a really wonderful, usable, and advanced tool, but at the same time they were also starting from a point where there was a user base and some

proven use cases and a real deep understanding of who their users were and what they needed, and I think that that's what really helped make them successful.

Brian Crecente

BrickLink's Studio was released as an open beta on Dec. 13, 2016. That original version allowed brick builders to make their creations in a virtual world with a limitless supply of digital bricks. But a year and a half later, the release of version 2.0 of Studio brought with it much more advanced options like the ability to create photorealistic renderings of a build, an instruction manual generator, and the ability to purchase physical bricks and elements sourced from the BrickLink marketplace to recreate a digital model in the real world. Junam said that because Studio was built on top of LDraw, it was much easier to search through the parts catalog than in LDD, and it was much more open than LDD, allowing anyone to add to the library. Eventually, BrickLink Studio even got a stability checker, which is designed to check if the digital models would be stable when built with physical bricks. As BrickLink continued to grow and its marketplace and studio flourished, the site drew more attention from the LEGO Group. In 2018, the LEGO Group partnered with BrickLink to create and launch an adult fans of LEGO designer program. Would-be designers could enter their creations over the course of a year, and a few were selected as limited edition 60-year anniversary sets. And then in 2019, the LEGO Group purchased BrickLink from Nexon's Jay Kim, calling it the world's largest online community of adult LEGO fans. In the November 2019 announcement, the LEGO Group wrote that BrickLink had grown into a marketplace of more than 10,000 stores from 70 countries with 600 million LEGO items for sale, 9,000 adult fans of LEGO Community (or AFOL) designs on display, and 1.1 million active members – and of course, that powerful Studio 2.0 software.

(Tune break)

Chapter 8: LDD to BrickLink Studio – 50:43

Ethan Vincent

These two storied histories both starting in the mid '90s and continuing through today, came together earlier this month when the LEGO Group announced that BrickLink Studio would replace LEGO Digital Designer as the official public virtual LEGO building software. While LEGO Digital Designer will still function it will no longer be available to download, and the LEGO Group is encouraging fans to download and switch over to BrickLink Studio, which can import LDD files.

Brian Crecente

You know, and I think it's worth stepping back for a moment and addressing the question of fan-made tools, and why the LEGO Group never really focused on them until the company bought BrickLink – and with it, Studio. To summarize, from the beginning the

LEGO Group was focused on making a digital building tool that would be accessible for children using a LEGO brick simulation. While the early fan community work remains impressive, it's always seemed more focused on the adult fan community. Of course, that wasn't the only issue. There were also a number of other, I think lesser issues, including the consistency of fan-created tools, quality control, the need for the company to have some semblance of control over a tool so important to its digital future, and of course, the issue of the LEGO Group having to protect the intellectual property rights of the bricks, the technology for simulating them on a screen, and how one would transfer them online. Now, Ethan, getting back to that announcement that just happened that BrickLink Studio is going to become the official replacement for LEGO Digital Designer. What were your thoughts when the LEGO Group first told us this was happening? I know I was pretty shocked.

Ethan Vincent

Yeah, I was surprised. I mean, I think I've told you this story before. One of my first encounters with LDD was actually with Ronny Scherer. He was showing me, I think it was version like 1.6. We had a discussion about LEGO brick creations. And I just always felt like LDD was such a, you know, kind of like an institution at the LEGO Group, you know?

Brian Crecente

Yeah, you know, we obviously have been digging into a lot of this and talking about LEGO Creator and some of the things that led up to LDD, and of course SPU Darwin, so I also thought it was sort of the rockbed of sort of digital design for fans. But yeah, I'm curious, we were both surprised this happened. When you think back at this now that you know all the things that we know, why do you think it happened?

Ethan Vincent

That's a good question. I mean, I think, you know, in talking to a lot of the designers, developers, fans, you know, people who were involved in LDD, it really comes down to the question: Can the LEGO Group continually support this base, you know? Can they give it all it needs, and I think it's been really interesting to see that LEGO fans and adult fans of LEGO sometimes need more and are constantly designing, iterating their designs, building, and they just have such a passion and affinity for all things LEGO digital creations, and this kind of work around the clock attention to detail. I don't think LDD can or could compete with that you know, with the pace of BrickLink. And so I think it's kind of an evolution thing at this point, you know, I think this idea of continuing with one really solid digital building tool is actually a really good thing.

Brian Crecente

Yeah, I agree with you. I think there is sort of two facets to this. One is the effort required by the developers and designers inside the LEGO Group, and the fact that there a sort of the people working on LDD are sort of being pulled in two different directions, or were being pulled in two different directions. On the one hand, they were having to really

support what had become such an important element, no pun intended, to the design methodology of toys, LEGO bricks sets, within the LEGO Group, and also, you know, all the creations happening sort of around the periphery, from television shows to video games, but then also trying to sort of appease the fans. And then on top of that, you know, the company buys BrickLink, which obviously comes with this massive marketplace, but also, arguably, a tool that is as good as, if not maybe better than LDD. So why not hand it off to the BrickLink people? And also BrickLink over the years has figured out a way to do something that I think the LEGO Group really embraces, and that is work hand-in-hand directly with the community. So they have the system in place that allows BrickLink to take this over, work more directly with the community, and frankly, solve that issue that, you know, kind of derailed LEGO Factory and Design byME when it comes to turning these into real brick designs. So I think it's a win-win, and it makes a lot of sense. So, you know, I totally get it. Of course, the folks who worked more directly on this have their own opinions, right, Ethan?

Ethan Vincent

That's true. And, you know, one of the key players in helping the community grow, supporting them, and making sure they have the tools they need is Tormod Askildsen. And Tormod, you know, said that the decision to shift from LDD Fan to Studio was one spurred in part by the LEGO Group's decision years ago to stop updating the fan version of LEGO Digital Designer, and he talked to us about that.

Tormod Askildsen

I think, essentially, we had to make a choice because we had now two digital building application: Studio and LDD Fan. And it's very costly, if we wanted to maintain both of them. And there are a lot of different requirements we would need to fulfill with both of them, and then we would need to, you know, of course, align between them. And, essentially, the functionality and the features in each of these two pieces of software, you know, it will be the same thing. So it's not, there was no reason to have two different applications start essentially to be successful. These are the things that it must be able to do, we couldn't see, find a way to really distinguish between them, say that this one should be good at this, so this should be good at that. It didn't make any sense because that, you know, the complete feature set and the way it integrates is important to the experience, so it didn't make any sense to have two applications. We had to make a decision. Do we want to go with Studio? Or do we want to go with LDD? And we decided to go with Studio. And the Studio team is on a roll, you could say, because since they started to build that software they have never stopped. They have never looked back. They are just continuing to evolve it and evolve it, the features and also the kind of vision for where they want to take it. LDD has actually only been available – we haven't really maintained and developed LDD Fan for the past few years. So if we decided to revitalize that and go with that instead, it wouldn't be right, I think. It was more natural to say, "Well, let's invest in Studio. Let the team continue because they are moving forward. They have great visions. They have great plans. They are doing great work. The Studio software has many features that LDD don't

have – you would need them to build into LDD and so on." And so it was kind of a, you know, it turned out to be a pretty obvious decision that let's go with Studio.

(Tune break)

Ethan Vincent

This month's decision to shift support to Studio also raises another question: Why did the LEGO Group purchase BrickLink, which included Studio, when they already had LDD?

Tormod Askildsen

You know, the acquisition of BrickLink with my perspective was very much driven by kind of the LEGO Group's desire to shift some of our focus towards the LEGO brick because BrickLink is first and foremost, the marketplace where you sell and purchase, you know, individual LEGO elements. And the nature of the marketplace, you know, where you actually have very close connections and also transactions happening, you know, between consumers, between fans, is a concept that we liked a lot, because we have the LEGO fan community is a very, very capable, you know, very involved, very engaged community, and the LEGO brick, you know, is important to them. Many of them buy LEGO sets and split them up just for the pieces, you know, that they use to make their own designs, and that's one way of getting to the pieces. Another way, you know, was to go to BrickLink, and we know that there are – I don't think there are any AFOLs out there who are not actually using BrickLink. So,we were looking at our fan community and what's important to them. Then we felt that it would be a good step also for the LEGO Group to say, "Well, we want to safeguard BrickLink. We actually believe that we can help BrickLink improve, and we can integrate in meaningful ways."

Brian Crecente

Junam said that the BrickLink engineering team is already hard at work on the next big iteration of studio: the 3.0 release.

Junam Kim

We are doing rearchitecting for Studio, we are trying to rewrite the whole code and refactor all the logics to embrace the new opportunities. That is a technical point of view. It's big changes for us, but it will take years to finish. Meanwhile, we tried to advance our connection to BrickLink and even for the other LEGO Group solutions, like digital building instructions or other opportunities as well. So we are running a multiple track for the Studio feature. We try to modularize all our functions so that we can easily test and update without creating any side effect. That is a big thing. And also by doing that, we hope that we can open our platform to the communities where like Blender or other software does, meaning that users can create a plugin, and then expand the functionality of Studio by adding those plugins. So that is another hope and goal we try to achieve. It's not clear yet, clear or guaranteed yet, but we are preparing that direction as well.

Brian Crecente

BrickLink Studio, now six years old, seems to be entering a new phase of support, which will likely give it a lifespan that stretches across decades. Tim also sees this latest evolution of BrickLink Studio as the next step in a journey started by the LEGO Group all of those years ago. A step powered by the strong sense of community found among fans of the LEGO brick.

Tim Courtney

I think it's really interesting to watch the arc of LDD go from first being a consumer application that was primarily designed for children. Then you see it integrating with Factory with Design byME. And you see the versions for the movie studios with Hollywood and you see LDD Pro as an internal tool. I think it would have been really great if the user and the LEGO fan, both the children and the the teen fans and the advanced adult fans, could have been a bit more centered in the latter stages of the development of LDD, to be quite honest. And I think it's wonderful now that the LEGO Group is focusing entirely on BrickLink Studio, after the acquisition of BrickLink, as the new official LEGO CAD software going forward. As someone who came from the community before working for the LEGO Group, I have to take some pleasure in knowing that the official LEGO CAD tool is now built on LDraw, which is a completely community-developed system. But also just the incredible adoption that LDraw has seen over the years – the extensibility, the ecosystem of tools, what people have done with really recreating LEGO Group quality building instructions, and photorealistic scenes, all from a completely open, free software. So there's a little bit of pride in there knowing, for me personally, that the LEGO Group's official CAD tool is actually built on a tool that we developed and proliferated in the community back in the early days.

(Tune break)

Ethan Vincent

Tormod counts himself lucky to have watched that evolution firsthand.

Tormod Askildsen

Yeah, I think it has been an absolutely amazing journey for the past almost 20 years. I got fascinated by, you know, adult LEGO fans, you know, back in the late '90s, after we launched LEGO MINDSTORMS®, and we saw how people actually used that technology, wrote books about it, you know, developed alternative software, and so on. So, I think the biggest thing for me working with AFOLs, is that these are super smart, capable people very, very passionate about LEGO play, or the LEGO hobby. And then they, you know, they have so many ideas, and they create so many different things that I think it just, you know, inspires us, and not at least inspires a lot of people, you know, everyone from other adults, grownups to teenagers, and kids as well. So, that's this force of this AFOL community who has not been, you know, like billions in numbers, but, you know, they have been in the

hundreds of thousands, and I think maybe a couple of million people around the world have been this dedicated, been this passionate about LEGO play, and at the same time, had some very strong capabilities to create value for all the people, and also inspired the LEGO Group. That has been fascinating, and we see that actually, the impact of that today is just so much bigger than it was, you know, 10, 15 years ago.

(Tune break)

Chapter 9: Final Thoughts – 01:04:49

Brian Crecente

For Eliska, the decision to not just embrace the fan community that her son created, but also work alongside it, is a reminder of her son's lasting legacy.

Eliska Jezkova

I think he would love it, you know, because there's no limit for it. There's no limit. And you can create anything, you know, MOCs, mosaics, anything, you know, and people basically can materialize, and then they can build and build. I think it's endless, like a heaven full of the LEGO bricks. But I think that BrickLink, you know, fill up many people's lives during these lockdowns. And I think this is very important. We have a hope for a better life again, after the virus. When you think back how the LEGO brick was created, then you think about Ole Kirk Christiansen – how many things happen to him, you know, how many fires destroy his carpentry business, his ideas, you know, but he always rose from the ashes with new ideas. And finally, he built up, you know, he got an idea of plastic brick. So it's incredible. And I think that we were down so many times, Dan by himself, and he builded us, but we ever had the strong will, to save it, and then build it, right, something new. So I think it's very important, and this is why this Danjezek.com I'm very honored to keep it, you know, for everybody else of inspiration. And I would like one day, you know, all this, you know, Dan's collection or replica to go to the museum in Billund, right, as a part of the BrickLink story. After he passed away, we got this email, how people were basically crying over the internet missing Dan. And we just realize, you know, I sit for all these years next to him or in the same room. And I never realized the amount of responsibility holding on his shoulder for the others. And we just realized the BrickLink is larger than life. It's larger than us. And we felt we are responsible to keep going and continue not just for sake of the people who participate, but the sake of the whole world because it can bring some joy to the next generation. One day when I will meet Dan again, I said, "Dan we made it" because I know that he always counted on me. Even when he said, "Oh mom, you know, too much or, you know, you have crazy ideas." No. And I think that we achieved what we promised to ourselves, and when we travel around the world, we see this outpouring support to us. We are welcomed like families. You know, we became people's lives. BrickLink became household names. People spent, you know, time with family, the generations, you know, around the LEGO brick and buying stuff for BrickLink, from BrickLink and build up this

incredible, incredible MOCs. And how I always said, I lost my child, but I got a million of these kids around the world, a lot like a Mother Goose.

Ethan Vincent

Thanks for listening to this special episode on LEGO Digital Designer. And of course if you're interested in LEGO video games, video game development, or just compelling stories, make sure to check out the Bits N' Bricks podcast. And while we're no longer running weekly episodes, there's plenty to listen to in our nearly 50 shows, and of course, stay tuned for more specials as we continue to explore the LEGO Group's and LEGO Games' rich history.

(Postscript music)

Bits N' Bricks: Credits – 01:09:10

Ethan Vincent

Bits N' Bricks is made possible by LEGO Games. Your hosts are Brian Crecente and Ethan Vincent. Producing by Dave Tach. Our executive producer is Ronny Scherer. Creative direction and editing by Ethan Vincent. Research and writing by Brian Crecente. Art direction by Nannan Li. Graphics and animations by Manuel Lindinger and Andreas Holzinger. Mixing and sound design by Dan Carlisle. Disclaimer voice is Ben Unguren. Opening's child voice is Milo Vincent. Music by Peter Priemer and foundermusic.com. We'd like to thank our participants: Tormod Askildsen, Tim Courtney, Tue Jakobsen, Junam Kim, Servan Keondjian, and Eliska Jezkova. We'd also like to thank the entire LEGO Games team. For questions and comments write us at bitsnbricks@LEGO.com. That's bits, the letter N, then bricks@LEGO.com And as always, stay tuned for more episodes of Bits N' Bricks.