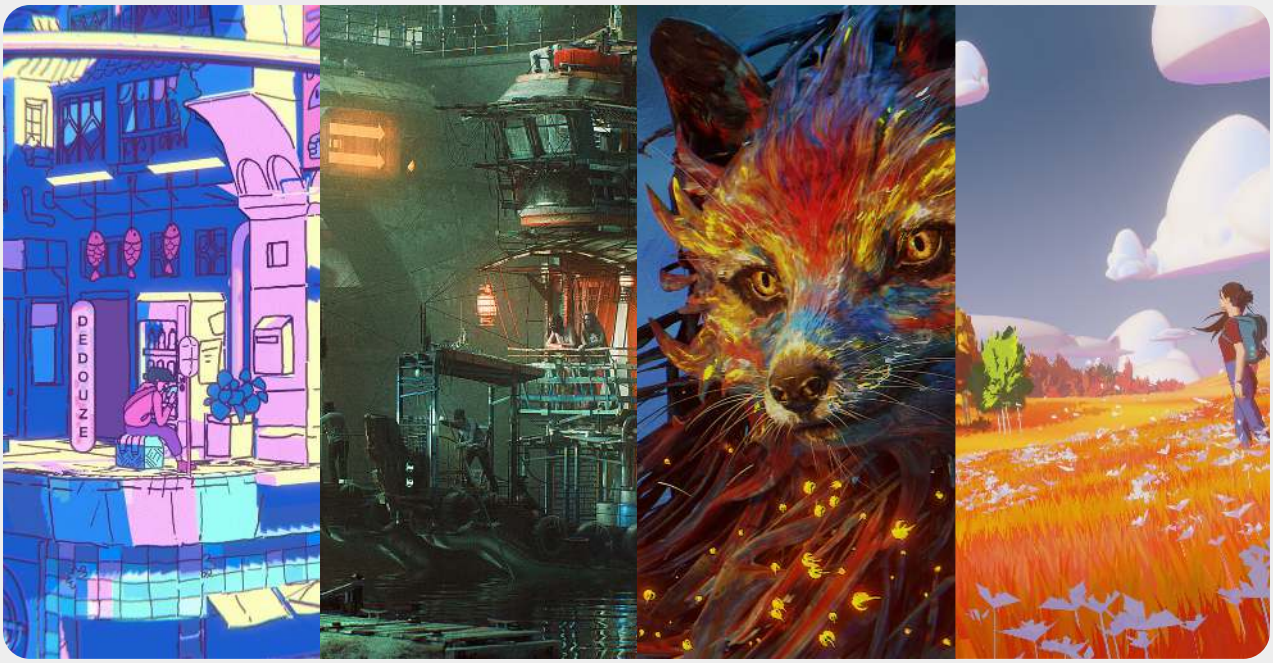
Blender Foundation Annual Report 2020

Blender is the free and open source
3D creation suite



blender.org

Contents

Credits

Thank you to everyone involved in making this year's annual report.

Anja Vugts-Verstappen, Bram Kranendonk, Christian Bunyan, Dalai Felinto, Francesco Siddi, Mike Newbon and Ton Roosendaal.

A Message from the Chairman

Ton Roosendaal
CEO @ Blender

The year 2020 has been memorable, to say the least.

At the time of writing, April 2021, the Corona pandemic is still paralyzing society, but there's hope that vaccinations will bring a return to normal life soon. Lock down and working remotely hasn't been easy for anyone.

There are lots of good reasons why we want to be together in real life: it's why the Blender Institute was established in the first place. Many scheduled activities in our headquarters did not happen. In that respect 2020 has become a bit of a gap year.

For me personally 2020 was dominated by a health crisis. Having spent half the year in hospital for leukemia treatments, I was incredibly lucky to experience a steady recovery, and given the all clear in November.

This was a life-changing experience in every way. Within a day, the whole organization was taken out of my hands. For most of the year, I watched Blender from the sidelines (more or less). A healthy experience, to be honest. Not least because things continued smoothly, especially thanks to COO Francesco Siddi, who did a tremendous job replacing me. Meanwhile, the Blender projects were admirably led by coordinator Dalai Felinto and chief architect Brecht Van Lommel. This allowed me to spend my limited time working on the organization's most pressing issues: defining its core values, mission and strategy for the coming years. In other words, to secure my legacy.

If there's one good thing I want to take from last year, it's Blender's continued positive reception. Wherever we looked, we found encouragement. The community of Blender contributors grew, the industry support for Blender grew - and best of all - the industry slowly became part of the community.

This is part of a larger trend. Free/open source software is gaining more traction in the media industry as a whole. Openness and sharing is going to dominate creative technology for makers and the industry over the coming years. I don't exaggerate when I state:

> “ This is going to be the decade of open source. ”

Blender has always been a bit on the sidelines of the Free Software and Open Source movement. That's not because we were unwelcome; rather, our strategy was to focus on the world outside the movement. We took a stand in areas where we thought a real difference could be made. Challenging the ugly reality, defying industry conventions, having a real impact on people's lives, and getting inspired by the creative-technical minds that, like us, strive for excellence. Free software and open source simply happens to be the best way to achieve this.

Clearly, things have changed throughout the industry over the past decade, especially within Computer Graphics. Studios big and small are seriously working on integrating free/open source software into their pipelines. The rapid success of the Academy Software Foundation underscores this: more than ever, the world's top film/effects/game studios are embracing free/open software libraries.

This puts Blender at the center of the open source movement within the media industry. We should accept that position, not as a passive participant, but by taking an active role and helping to shape the future of media creation in the coming decade. Not because we can, but because we truly care. Because we only have one interest to defend: the rights of developers and artists to enjoy open and free access to 3D technology.

Ton Roosendaal
April 2021

The Freedom to Create

by Ton Roosendaal

If one thing would define me, it's the insatiable drive to study and master 3D creation in the widest sense. Whether as an artist, developer, or producer, I'm fascinated by anything to do with the field. For me, '3D' is the ultimate blend of creativity and technology.

This is the core of my personal motivation, one I wish to share as widely as possible. This is the true mission of the Blender organization.

"Creative Freedom" by Nina Paley

The Blender Mission: Get the world's best 3D CG technology in the hands of artists as free/open source software.

The main goals of the Blender Organization are to:

- Provide access to the world's best 3D CG technology and make amazing things with it
- Use and contribute to Free/Open Source software and Free Culture
- Change reality, have an impact, make a difference

A mission means the organization's purpose, it's core DNA. A mission is where we are, it's what we do every day. To prevent a mission drifting, a longer term goal can be defined - the 'vision'. For Blender, this thinking can be encapsulated in the following:

> "The freedom to create"

Actually, this differs from "creative freedom". The "freedom to create" precedes it, it implies fundamental rights for people, to be enabled and empowered to express themselves as creative human beings.

The Blender Vision: Everyone should be free to create 3D CG content, with free technical and creative production means and free access to markets.

To further explore this vision, this freedom has three key aspects:

Freedom to Deploy Production Software.
This is the blender.org project itself, developing Blender as a Free Software (GNU GPL) 3D creation tool. Blender is free to use, for any purpose, forever. It's why the Blender Foundation exists.

Freedom to Apply Creative Resources.
For an aspiring artist or studio, access to creative resources are equally important — free to be used for any purpose as well. It's why the Blender Institute was originally founded, to contribute to Free Culture by means of Blender Open Movies and other Creative Commons projects.

Freedom to Participate in the Market.
For creative people all over the world, this is a pressing topic. Neither the new streaming giants (Netflix, Disney), the game markets (Steam, App Store) or the platform economy (YouTube, Patreon) is really addressing this. What's the benefit of having all the tools and resources, and no way to earn a decent living? While we don't have all the answers, this is something we're committed to exploring further.

To complete the exercise, I defined core values for everyone involved with Blender.

Our Core Values

- We care (passion)
- We share (community)
- We work together (openness)
- We have a story (vision)

The first three values are straightforward. They're simple and honest statements about who we are and why we're doing this. The fourth value — "story" — is my personal favorite. "Story" means you have something to tell. It's an attitude as well as a motivation. It's about the drive to make a difference, to stand out, to have an impact, to not be afraid to fail, to experiment, to dare, to not follow the masses, to try and try again, to make amazing things happen and sometimes fail miserably. The history of Blender reflects this: a true story that was told over and over, starting 25 years ago when a Dutch guy had an idea, and gave it a go.

The Organization

As a midterm target (i.e. three to five years), we will continue to work on the reorganization announced at the Blender Conference in 2019. The Blender project is a huge success, but with success comes a certain responsibility. Many people and organizations now depend on Blender. This is why we must build a stable organization in which Blender's future is secured for the long term. Sustainability also requires establishing a board of directors in order to oversee day-to-day management, as well as adding a supervisory board for annual meetings (with the intention of reflecting on the annual report and approving plans for the coming year).

Within five years, Ton Roosendaal, the Foundation chairman and Institute director, will migrate his responsibilities to a new team, step down and move to an advisory function. Furthermore, he will use Blender Studio as a playground for exploring Blender's mission (especially the "access to markets" aspect, see above).

Midterm goals:

- Become a sustainable, future proof organization dedicated to realizing Blender's mission.
- Secure Blender's original spirit, and the legacy of its founder.
- Become an innovative organization driven by curiosity, and the desire to excel at creative/technical projects.

There is also a strong motive to structure work on Blender in a way that it remains true to its core values. In other words, a public, open, community based project providing independent facilities to everyone, everywhere, at blender.org.

The Blender organization does not wish to sell either products or services, which means it isn’t in competition with its community of users. This allows for a flourishing ecosystem of creatives and businesses to develop around the Blender organization.

In 2020, we made the first legal step towards a new organization model: Blender Institute BV was legally split into two corporations, Blender Institute and Blender Studio.

The Institute's sole focus will be to act as the "working company" of Blender Foundation. Legally speaking, ownership of the Institute's shares will be transferred to the Foundation, making the Foundation + Institute a powerful combination. All intellectual property and funds will remain in the Foundation (keeping it low risk and safe) and all corporate activities and liabilities will be outsourced to the Institute. The main income model for the Foundation + Institute is donations, using the Development Fund.

Blender Studio will further explore open source pipeline and content development. It will also challenge the market as an independent production company providing free/open content, funded by Blender Cloud subscriptions.

Blender Foundation

To build a free and open source complete 3D creation pipeline for artists and small teams via a publicly managed project on blender.org

Blender Institute

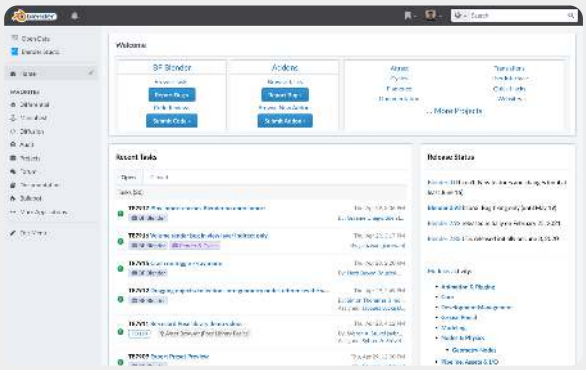
Build a sustainable organization to support Blender Foundation in its mission. This includes managing offices, facilities, websites, event, workshops, conducting and coordinating research, development projects and product design.

Blender Studio

Support the Foundation's mission by validating and stress testing Blender in a production environment, by producing community funded animated film or other 3D media projects and sharing the entire production process.

Module Teams for Core Blender Development

by Ton Roosendaal



developer.blender.org

Blender is growing fast. With the success of the Blender Development Fund and industry support, it's important to make sure that the blender.org project organization remains future proof. Numerous activities around Blender are now performed by full-time employees or people working remotely on a grant. Together, they are responsible for core development projects, including improving code quality, documentation, developer operations, and support. All very important, but how do these efforts relate to work done by other (voluntary) contributors?

In the last months of 2020, the Blender Institute crew tackled our growing plans (and pains). An expanding team means a need for operations management, coordinators, and human resources specialists. We also need to define developer roles such as principal engineers, seniors, and product designers. Finally, we need to define how projects are organized overall.

We reviewed popular development organizational styles, but felt that none of them provided the right direction for Blender. We should not emulate a software company. I believe there is one aspect of Blender we should never give up on:

> “ Blender is a community effort. ”

As we all know, communities are messy, noisy and disorganized. It takes much energy to get an online community moving in a chosen direction, to reach consensus and encourage effective collaboration. Worse, open source communities often bleed top talent because the best feel dragged down to the level of the group as a whole, including beginners. That's the main criticism on community-driven projects. How do you combine the quest for excellence with a public project accessible to everyone?

Luckily we already had an answer: the module team organization we've used for almost 20 years. It just needed an upgrade.

Let's divide Blender tasks into three categories: Operational, Tactical and Strategic.

Operational: bug triaging, onboarding, documentation, website development, testing, communication, facility management, administration.

Tactical: well-defined short term development projects, work that culminates in releases, student projects, maintenance and code upgrades, wrapping up unfinished features, making Blender releases.

Strategic: general roadmaps, product designs, industry relationships, research, mission critical software projects, keeping top talent on board.

The Blender organization can be held responsible for all operational aspects, facilitating the blender.org project, and welcoming contributions from the community. In these roles we currently employ several people, including a DevOps engineer and forum moderators.

Developers hired by Blender Institute will be assigned to specific strategic projects. These usually have only one goal: translating innovative designs into MVPs (Minimum Viable Products), then handing them over to the module teams as quickly as possible.

This makes the modules teams on blender.org the "tactical teams" in Blender. That's where the real open source dynamic kicks in. This is where the actual magic happens. It's public, sometimes messy and noisy, but often incredibly rewarding and surprisingly effective. Good examples are work contributed in the areas of Grease Pencil and Sculpting.

Strategic contributions to Blender can also be provided by other organizations or teams. This is already happening. For example, NVIDIA and Tangent Animation assigned engineers to help integrate Pixar's USD into Blender.

Obviously it's the Blender Foundation's task to frequently present and discuss strategic roadmaps for Blender, and to make sure the module teams are aligned.

How Modules Work

Modules are largely free to organize themselves, though each type of module might require different management styles or procedures. Some modules will be more difficult to join (Cycles & Rendering), other modules might be stricter in terms of accepting patches (e.g. the Core Blender module).

Within a module there are two roles: the “owners” and the “members”.

The main rules for modules are:

- Module owners are empowered to commit code
- Module owners decide together as a consensus (unanimous)
- Module members need an owner to accept or review their work
- Modules only use public blender.org platforms (code & communication)

Blender module teams should be as large as reasonable. If they grow too big, they can split up. Technical Artists (TAs) must also be included among each module’s members

Module teams are responsible for issues in their own code (the module) but should feel free to move open issues onto a to-do list to deal with later. Module Owners are held accountable: their role implies they accept responsibility.

Modules can expect wide-ranging support from the Blender organization, both for operational tasks but also for Development Fund grants (to retain essential people).

You can read more about how the module organization works in the Blender Wiki.

Offices

Blender Headquarters

In 2018, Blender moved from its humble office in central Amsterdam to more spacious premises in the north of the city, a location better suited to this rapidly growing organization. The 800m2 space contains offices, a big canteen, and meeting rooms for gatherings, strategic core Blender projects and workshops. At the end of 2020 Blender extended its contract for the office for a further 5 years. It also leased an additional 400m2, facilitating the organization's future growth. This office houses the entire Blender ecosystem: the Blender Foundation, the Blender Institute and Blender Studio (currently 40% of the office space is sublet to the Blender Studio).

Workshops

Two workshops were hosted at Blender Headquarters during 2020.

In February, the User Interface Workshop focused on the Asset Manager, Everything Nodes, and more. It involved Ton Roosendaal, Dalai Felinto, Brecht van Lommel, Julian Eisel, Bastien Montagne, Pablo Vazquez and William Reynish. For more information, find out about the User Interface Workshop on the code blog.

Though most workshops and gatherings were cancelled due to COVID-19, a temporary easing in restrictions meant we were able to host the Particle Workshop. This involved Jacques Lucke, Brecht Van Lommel, Dalai Felinto and Ton Roosendaal.

Crucially, this workshop helped define what would become Geometry Nodes, part one of the Everything Nodes project, even reaching the master development branch at the end of the year.

Check out the post for more on the Particle Workshop and the video for Geometry Nodes.

People

As Blender scales up, the organization seeks to attract experts with complementary skill sets to join the team and management, and is also redefining existing roles.

Leadership

Ton Roosendaal
CEO @ Blender

Spearheading the organization is Ton Roosendaal, original creator of the Blender software. His focus is on securing the future of Blender.

Francesco Siddi
COO @ Blender

Francesco acts as the CEO's right hand, involved with all business and strategic topics. He also works as producer at Blender Studio.

Operational Team

Blender hired the HR specialists Bunchmark for advice on scaling up responsibly and durably. Bunchmark helped to blueprint the organization and improve job descriptions/job roles, and contributed to the reconfiguration of Blenders updated mission and vision.

As well as the developers employed in Amsterdam, Blender works with a network of international developers. Work started on setting up an employment scheme through international payroll services.

Bram Kranendonk
Operations Manager

Day to day coordination of all operations at Blender, including bookkeeping, purchasing, office management, human resources and payrolling.

Anja Vugts-Verstappen
Financial Manager

Anja has worked as financial manager and bookkeeper for Blender since the beginning. She is especially well known for managing the e-store and conference back office.

PEOPLE, OPERATIONAL TEAM

Pablo Vazquez
Communications Manager

For several years, Pablo has hosted frequent live streams about Blender development and other blender.org activities. He is the main editor of blender.org including release logs. He loves to travel around the world as a Blender evangelist, which he hopes to pick up again next year.

Christian Bunyan
Head of Copy

Christian is the main editor of Blender Cloud content, but the Studio frequently lends him to the Institute for other writing jobs. Having an experienced (native English) writer on board is a blessing for our international team.

James Monteath
DevOps engineer

"Developer Operations" involves maintaining the technical infrastructure, and helping the developers' technical needs by automating tedious tasks.

Dan McGrath
Systems Administrator

Blender has a dedicated rack in a data center for all blender.org websites. Dan keeps our web services sane and safe. He is a specialist in networking infrastructure, which he manages remotely.

Anna Sirota
Senior Back End Developer

Blender's back end developer is responsible for services such as Blender ID, Development Fund, Blender Cloud and Blender Store.

Mike Newbon
Designer & Front End Developer

As graphics and web designer, Mike mainly works for the Studio on Blender Cloud. A few days a week he also contributes to general Blender tasks (such as this report).

The Development Team

Developers

The Development team has seen some reconfiguration: the team has a development coordinator and the developers roles have been redefined, spanning in seniority from junior developer to regular, senior and principal developers. Most of these developers work in-house at Blender's Amsterdam offices. They collaborate with the global Blender community online, constantly moving Blender forward. Besides the in-house developers we have a solid core of remote developers spanning the world, from Australia to the United States, Germany and France.

Redefinition of Roles in the Development Team

Roles within the development team have been reassessed and redefined with the help of HR specialists to make clear responsibilities, expectations and goals. Within the development team, Blender makes a distinction between four different kinds of developers: principal, senior, regular and junior developers. A full diagram of the main developers' roles will follow and we will soon share this with the wider public, as well as roles for the studio and online contributors.

The four main developers' roles can, in short, be characterized by:

Principal Developer

A developer working autonomously, contributing to engineering or product design to solve strategic needs and proposing and reviewing designs to improve Blender as a whole.

Senior Developer

A developer contributing as tactical team lead (coordinator, product manager, lead engineer, etc.) to projects, coaching junior and regular developers by working closely together, reviewing their code and giving them feedback.

Intermediate Developer

A developer participating as a tactical developer, being supervised by seniors, contributing by coming up with designs to improve their own work.

Junior Developer

A developer contributing to projects as an operational assistant, being supervised by regulars and seniors.

THE DEVELOPMENT TEAM

	Junior Developer	Intermediate Developer	Senior Developer	Principal Developer
Main Task	Contribute to operations.	Contribute as team member.	Contribute to improve a team.	Contribute to strategic goals.
Work on Modules	Fix bugs and review patches by the community.	Fix bugs and review patches for modules you are active in.	Fix your own bugs and review patches from your team.	Plan & implement new strategy for bugs & patches.
	Work on operational tasks + pre-approved defined development tasks.	Manage your own development tasks as a team member pro-actively.	Schedule and manage development tasks, for yourself and others.	Manage your own development tasks.
		Provide technical and functional documentation (release logs).	Produce technical specifications or product design for your projects.	Provide modules with specification + technical design on strategic projects.
	Eager to learn.	Understand what you need to know to do your work.	Responsible to get the info required to deliver a project.	You have the info required to do your work.
	You show and share what you do.	Keep informed about what your team members do.	Make sure the team knows what they need to know.	
	Module member Check with senior for reviews & commits.	**Module member** Check with senior for reviews/commits.	**Module owner** Authorized to commit code in module.	**Module owner** Authorized to commit code in module.
	Deliver maintainable, scalable and reliable code, well documented, with unit tests and user examples.			
Onboarding & Coaching	Answer questions from developer community.	Help developer community members get involved.	Get developer community members involved.	
		Coach junior developers by closely working together, reviewing their code and giving feedback.	Coach junior & regular developers by closely working together, reviewing their code and giving feedback.	Coach senior developers by closely working together, reviewing their code and giving feedback.
Projects & Research	Contribute to projects as operational assistant.	Participate as tactical developer supervised by seniors.	Contribute as tactical team lead (coordinator, product manager, lead engineer, ...)	Contribute to engineering or product design to solve strategic needs.
		Contribute to designs to improve your work.	Contribute to designs to improve the project.	Manage your own development tasks.
			Research and adopt new technologies.	Research and adopt new tech to evolve Blender.
				Make proposals for strategic projects.
Motivation	Read and understand the Blender values.	Carry out the Blender values.	Live and breath the Blender values. Add to the culture.	Live and breath the Blender values. Add to the culture.
Ship, Deliver	Focus on finishing stuff.	Focus on finishing stuff. Flag it when projects/discussions have no end.	Finishing stuff. Flag when projects/discussions have no end, bring solutions. Enable others to finish.	Come with solutions when projects/discussions have no end.
	Dives in head first.	Analyses and detects problems.	Analyses and comes with solutions.	Game changer!

Overall Coordination

Dalai Felinto
Development Coordinator

Dalai worked on the new bug triaging process, planning and communication. He acted as the product manager of the Geometry Nodes project to try new approaches to team work with design (and remote) collaboration for the strategic projects.

Nathan Letwory
Release Coordinator
(Finland)

Coordinated the release of Blender 2.82 and 2.83 helping wrap up the 2.8 series and start the first LTS release. Nathan helped to consolidate the deployment for 3rd party stores like Steam and Windows store.

Principal Developers

Brecht Van Lommel
Principal Developer

During his period as chief architect, Brecht structured and oversaw the “10 projects for 2020” initiative. He contributed directly to the implementation of volume objects and Cycles development.

Sergey Sharybin
Principal Developer

Sergey wrapped up the multires support and reviewed the main contributions to sculpting. He acted as the go-to person for all the server and network needs of the Blender facility, both as infrastructure designer and hands-on operator.

Campbell Barton
Principal Developer
(Australia)

Working from Australia, Blender’s top committer (778 commits in 2020) developed lazy modifier stack mesh conversion for edit mode to help edit mesh performance and continued to polish the tool system.

Clément Foucault
Principal Developer
(France)

EEVEE lead developer Clément had his hands full with two refactors, bug fixes and features such as improved motion blur for EEVEE. In 2020 he started the Vulkan project, as part of Blender’s long term compatibility strategy.

Senior Developers

Sybren Stüvel
Senior Developer

Sybren re-ignited the buzz in the Animation (and rigging) Module, bringing old and new faces to the busiest module of 2020. He refactored and completed the Alembic exporter, and implemented the first version of the USD exporter. Sybren is tech lead in Blender's collaboration with NVIDIA for USD importer integration.

Jeroen Bakker
Senior Developer

Besides helping with the draw manager refactors, Jeroen also implemented viewport render passes, improved animation GPU overhead playback performance and was instrumental for the LTS by managing the ten long-term support releases of last year.

Intermediate Developers

Bastien Montagne
Intermediate Developer

Bastien tackled the staggering undo performance issues reminiscent of the 2.8 project. He then continued working on the library override system.

Hans Goudey
Intermediate Developer (USA, started Summer '20)

Hans finished his second Google Summer of Code and was then hired to finish up the Properties Editor Search, and as a core member of the Geometry Nodes project.

Jacques Lucke
Intermediate Developer (Germany)

Working from Berlin, he spent most of the year designing and prototyping particle node systems. Jacques then became the tech lead in the Geometry Nodes project, bringing modeling nodes into Blender. He expanded on the initial volume support by bringing in volume modifiers.

Pablo Dobarro
Intermediate Developer (Spain)

Pablo contributed innovative sculpting features such as cloth brushes. He is passionate about getting feature parity with professional sculpting workflows and interchangeable features like multires unsubdivide.

Julian Eisel
Intermediate Developer

Virtual reality scene inspection is now possible thanks to OpenXR debut and Julian's work. He started the Asset Browser project, a fresh re-scoped take on Asset Management.

Sebastian Parborg
Intermediate Developer

Working as a bridge between the Blender Studio and the development team Sebastian helped with numerous bug fixes, modifiers and cloth and rigid body improvements.

Kévin Dietrich
Intermediate Developer
(France, started in Autumn'20)

Thanks to a Patron Development Fund member we could hire an additional developer to expand the Cycles Render API for everyone's benefit.

Designer

William Reynish
Designer
(Denmark, until Summer '20)

William contributed to several parts of the user interface such as a new keymap editor, and maintenance of the industry compatible keymap.

Sebastián Barschkis
Intermediate Developer

Thanks to him Blender has a new fluid simulator, bringing improved fire, smoke and water using the Mantaflow engine. Sebastián also took on the macOS platform support.

Richard Antalík
Intermediate Developer
(Czech Republic)

Richard started helping the bug triaging team but switched gears to dedicate his full-time to the Video Sequence Editor performance.

Grant Recipients

Wayde Moss
Development Grant Recipient
(USA, started in Winter'20)

As part of the reboot of the animation module, Wayde received a grant to help with animation bug fixing.

Yiming Wu
Development Grant Recipient
(China, short grant)

Yiming wrapped up the line art project (merged in 2021 in time for the upcoming Blender 2.93 release).

Bug Triaging Team

Philipp Oeser
Bug Triager
(Germany)

Philipp was responsible for coordination of the bug triaging team and helped modernize the triaging process with better standard replies and procedures.

Germano Cavalcante
Bug Triager
(Brazil)

Germano used his development days for snapping improvement, modeling bug fixes and bug triaging.

Robert Gützkow
Bug Triager
(Germany, started late in 2020)

Joining the team late in the year, Robert worked part-time on bug triaging.

Falk David
Bug Triager
(Austria, started late in 2020)

Falk finished the curve editing Google Summer of Code, and later joined the bug triaging team.

General Support

Aaron Carlisle
Documentation
(USA)

Aaron contributed to User Manual enhancements and is coordinator of the Blender documentation efforts.

Quality

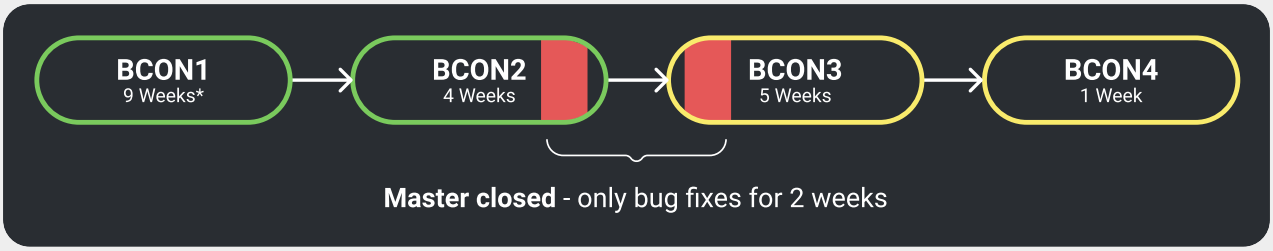
An important driver for Blender is the continuous improvement of quality within the Blender software and development process.

Tracker Curfew

Since the release of Blender 2.8 in late 2018, Blender has been getting a lot of attention. Worldwide the number of Blender users has increased significantly. A side effect of this is an increase in the number of issues that require attention, rising from a few hundred to more than 3000 (minor) issues. We started the 'tracker curfew' project in early 2020. This was designed to sanitize the triaging process and clean up/fix as many bugs as possible. Find out more about the Tracker Curfew on the code blog.

Bug Sprints

In 2020 we also reconfigured the strategy of Bug Sprints in the development cycle. The aim was to ensure a high-quality pass on releases and focus the entire team on the same goal. In reshuffling the development process, we were able to accommodate two Bug Sprints in one development cycle. Find our more about the Bug Sprints on the code blog.



DevOps

In summer of 2020, Blender hired a DevOps Engineer. The DevOps Engineer improves the development environment by implementing and managing the automation of (developers) tasks, including testing and building, delivery and deployment. Achievements range from a new buildbot supporting patch building, automatic daily deployment for 3rd party stores like Steam and Snapcraft and support for multiple versions of the user manual developed concurrently.

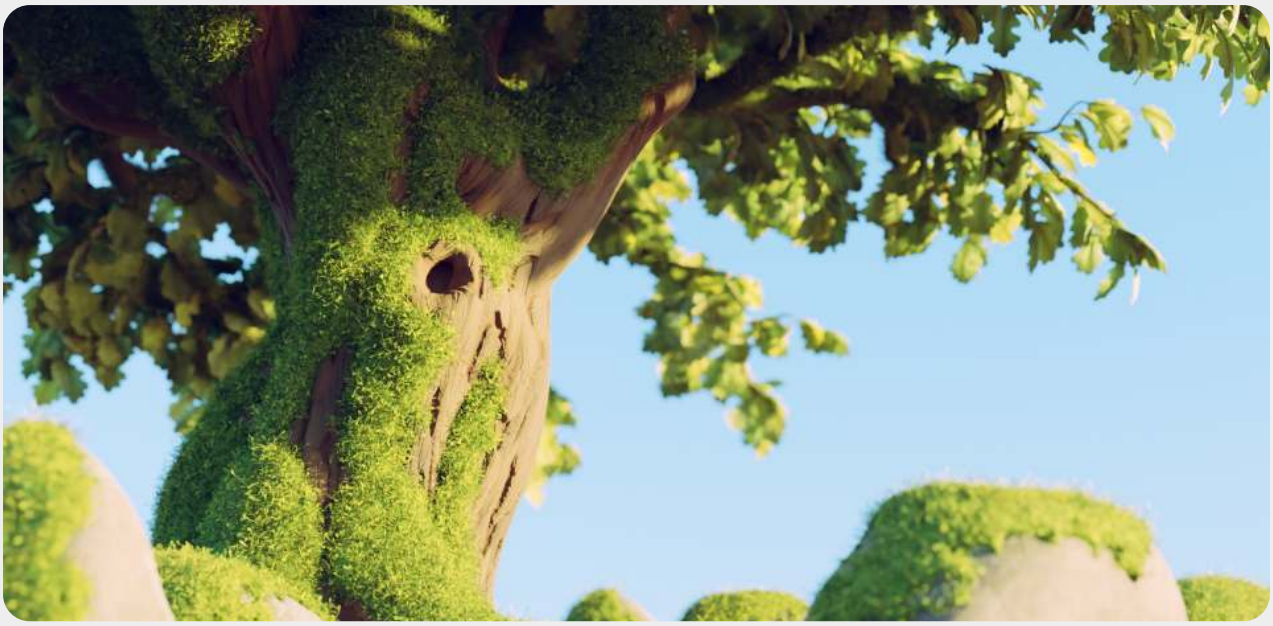
Monthly Code Quality Day

The Blender project has existed for more than 20 years. During this time, its codebase has grown organically, with a healthy mix of refactors, brand-new code, and core parts that have survived the journey. Nevertheless, there are some outdated sections that, while functional, would benefit from an upgrade.

Sometimes technical debts start for the best of reasons. But when left unresolved for too long they can seriously impact the long term sustainability of the project, the cross-module pollination, and overall stability/quality. To help mitigate these issues, the Code Quality Day project began earlier this year, resulting in a regular opportunity to address technical debts. As well as helping the software to scale, the Code Quality Day aims to make Blender more welcoming for new developers. Find our more about the Code Quality Day on the code blog.

Geometry Nodes Project

After two years of development the Everything Nodes project pivoted to focus first on procedural modeling. To make this possible, the project was assigned to a multi-talented team including designer, artists using the features, and developers. As an experiment, the team adopted a scrum framework, working with sprints closely tied to the Sprite Fright production use cases. The Geometry Nodes started officially late October, and is part of Blender since its 2.92 version early in 2021.



Geometry Nodes applying moss and leaves to a tree in Blender 2.92 by Simon Thommes, Blender Studio.

Industry Relations

Members of the Blender Development Fund are actively involved in Blender development itself. Notable examples are:

CPU and GPU

Blender developers work closely with engineers within AMD, Intel and Nvidia to ensure that artists have an optimal experience using CPUs and GPUs for editing and rendering.

Universal Scene Description

Further steps were taken to adopt the USD open standard. Initial development of the exporter is being expanded to the importer. Blender Foundation established a workgroup (bf-usd) to publicly discuss topics, design ideas and gather feedback on this. Tangent Animation publicly shared their in-house version of the USD integration. NVIDIA started developing an importer that integrates some of Tangent's functionality, and fits Blender's I/O design specs.

Mixer Add-on

Ubisoft developers are already committed to Blender since 2019. This support was further reinforced by their new Mixer add-on. Mixer is an open-source Blender add-on developed at Ubisoft Animation Studio for real-time collaboration in a 3D environment. It allows multiple Blender users to work on the same scene at the same time.

Alembic and Cycles

Facebook works with a developer on Alembic Animation Procedural and geometry processing performance of Cycles, which is fundamental in accelerating Cycles becoming a renderer for real time application.

Other Projects

Blender Conference 2020: Together Apart

This annual tradition couldn't be stopped by the pandemic. The eighteenth edition of BCON took place online as a ninety-minute documentary-style film with over eighty participants. People from all over the world shared their experience of 2020 and their relationship with Blender. A truly unique edition that made the Together Apart theme shine.

Scripting for Artists

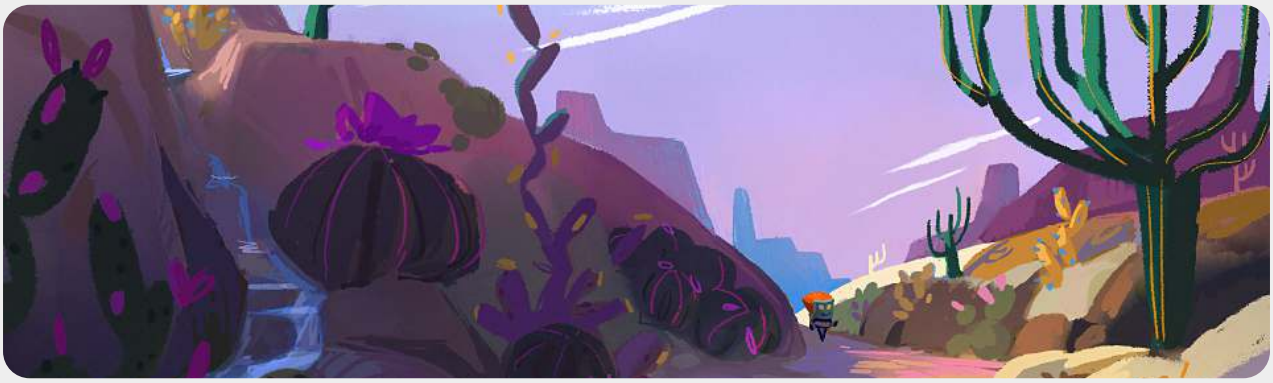
The popular series from Blender Cloud got extended as part of the "Blender Open-up" initiative during the first weeks of global lockdown. This new chapter covered topics such as creating your own user interface with Python, using custom properties, and a special section dedicated to review and give feedback on add-ons by the community. Free for everyone in the official Blender channel on YouTube.

Blender Today, Every Day

On top of the weekly updates about Blender development, the Blender Today show on YouTube switched to a daily schedule featuring interviews with artists and developers. Special episodes covered topics such as Nodes, Sculpting, non-photorealistic rendering, and "Dive into the Code" to help new developers get familiar with Blender's source code structure. Check out the YouTube playlist.

Settlers

The Blender Animation Studio team joined the Open-up initiative with the Settlers project, a set of rigged characters and environments ready to use. All the behind the scenes and source files, from concept art to final rigs and animation, were released weekly for free in Blender Cloud.



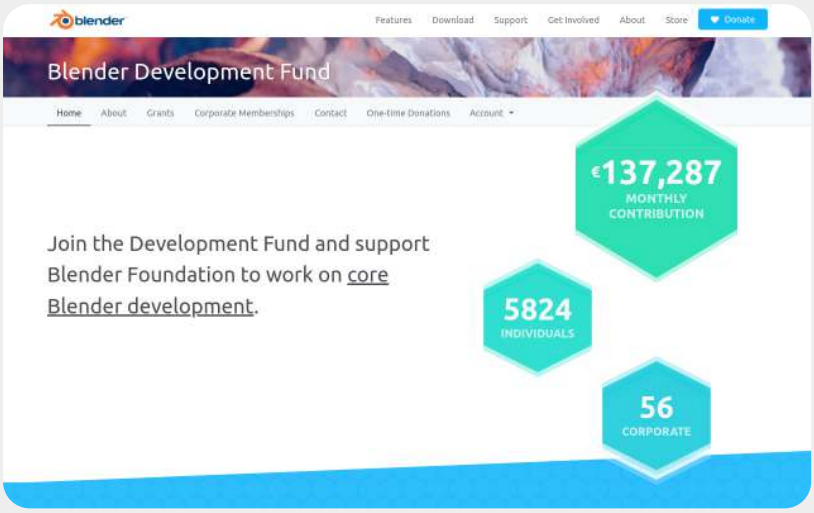
Settlers concept art by Vivien Lulkowski, Blender Studio.

Finances: Income

Growth of Development Fund in 2020

The Development Fund has seen a significant increase in income, with new parties like Facebook and Amazon joining.

In 2019 the Dev Fund generated € 841,797 in donations, in 2020 it amounted up to € 1,131,780 - a 34% increase.



The Development Fund is responsible for 82% of Blenders income.

Only **6%** of Blender Income was from **Patron Sponsors** in 2019.

20% of Blender Income was from **Patron Sponsors** in 2020.

€0 €1,376m

Income		2019		2020
Epic Games	€ 267,698	28%	€ 330,888	24%
Dev Fund - Patrons	€ 54,344	6%	€ 272,482	20%
Dev Fund - Corporate	€ 203,627	21%	€ 207,168	15%
Dev Fund - Individuals	€ 316,128	33%	€ 321,242	23%
Donations from BlenderMarket	€ 24,154	3%	€ 81,617	6%
Google (Summer of Code)	€ 5,961	1%	€ 4,942	0%
Other Large Donations	€ 64,257	7%	€ 142,448	10%
Generic Small Donations	€ 22,112	2%	€ 15,289	1%
Total	**€ 958,281**	**100%**	**€ 1,376,076**	**100%**

Finances: Expenses

Donations Contribute to Blender

Donations and the Development Fund directly contribute to making Blender better. In 2020, 67% of all expenses went to Blender developers and contributors salaries and fees.

Development Liaisons for Bigger Sponsors

We really value all of our sponsors for their support and input. In order to manage expectations and for sponsors to have a direct link to the development team, we assign specific Blender developers to be development liaison for specific bigger sponsors.

€0 € 1,376m

Income		2019		2020
Developer Salaries - Dutch payroll	€ 376,305	39.3%	€ 554,853	40.3%
Developer Salaries - International payroll	€ 122,560	12.8%	€ 181,180	13.2%
Developer Grants	€ 99,576	10.4%	€ 129,445	9.4%
Chairman Salary *	€ 40,950	4.3%	€ 55,188	4.0%
Developers Overhead **	€ 120,323	12.6%	€ 188,036	13.7%
Accommodation & Events	€ 10,914	1.1%	€ 16,646	1.2%
Blender Conference	€ 14,000	1.5%	€ 0	0%
Travel	€ 11,298	1.2%	€ 1,055	0.1%
Blender.org ***	€ 79,483	8.3%	€ 91,189	6.6%
Siggraph Booth	€ 18,401	1.9%	€ 0	0%
Transaction Fees	€ 17,544	1.8%	€ 21,954	1.6%
Various Costs	€ 1,304	0.1%	€ 3,374	0.2%
Accounting Costs	€ 3,429	0.4%	€ 8,155	0.6%
Reserved	€ 42,000	4.4%	€ 125,000	9.1%
Total	**€ 958,087**	**100%**	**€ 1,376,075**	**100%**

(*) This amount is 70% of the overall salary, covered by the Institute, the other 30% is covered by the Studio
(**) Insurances, employer taxes, wage administration, office rent and costs, computers, financial manager, system admin
(***) Website admin, backend/frontend development, design, content, support, project coordination and infrastructure

Blender Studio

Income and expenses for Blender Studio (film projects, Blender Cloud content) have not been included in this overview or in this report. The studio is a separate corporate entity and - although the studio contributes to Blender's mission - it's funded entirely independently by Cloud subscribers. The studio pays its share in facilities and services to Blender Institute.

Salary Levels

Chairman/CEO (Ton Roosendaal) gross salary in 2020 was EUR 78,840. The salary costs are split between Institute (70%) and Studio (30%). This salary is the top-level salary for a person in the Blender organization. The Lowest gross full-time salary for employees was EUR 32,500.

Events

Due to Corona restrictions most worldwide industry events like SIGGRAPH were either cancelled or took place online. This included Blender's own Conference. Both explain the lack of expenditure on the event front in 2020, as opposed to 2019.

Budget Reservations for Next Years

Due to travel restrictions and remote working, it was not the right year to recruit new developers. And while Blender nevertheless hired some exceptional talent, part of the organization's budget has been reallocated to push for more hires in 2021.

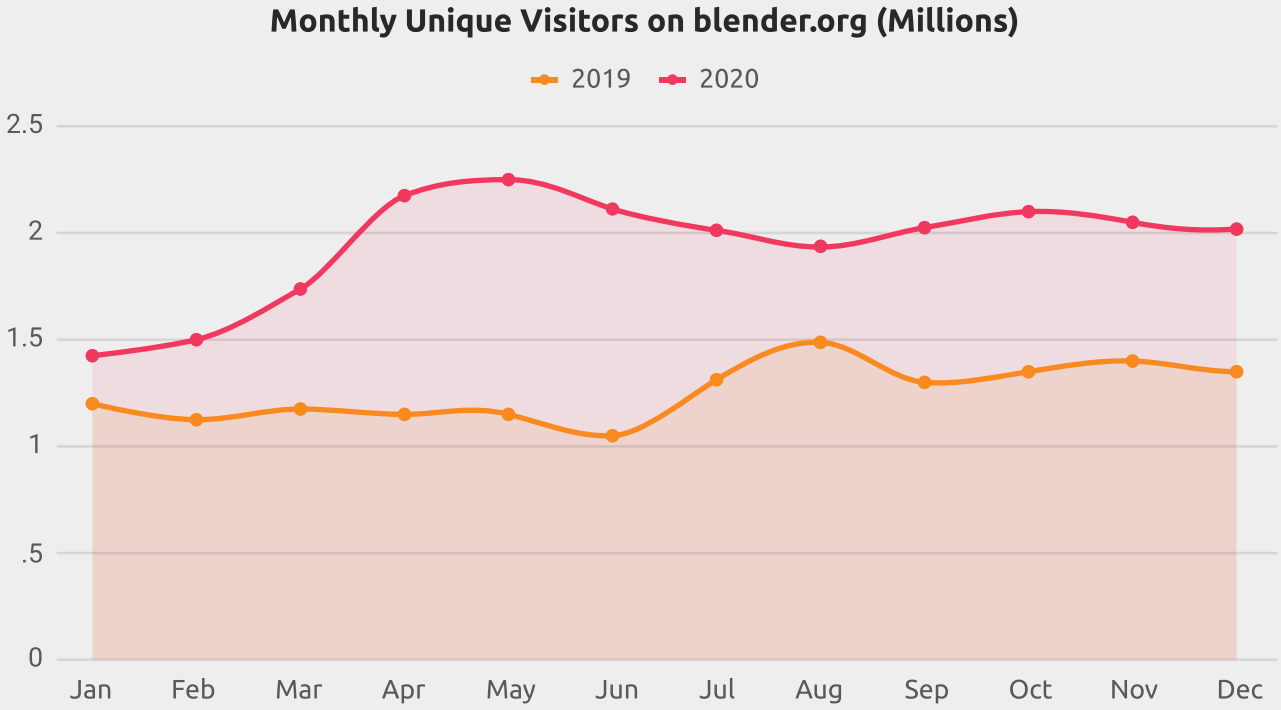
In 2021 Blender will strengthen the project and its team by investing in, among others: A Product designer/manager | a UI developer (C/C++) | a Lead architect | a Cycles senior engineer | more Animation developers | more visibility through event participation (inc. Siggraph)

Blender by the Numbers 2020

As a follow up on the popular “Blender by the Numbers 2019” post shared on blender.org, here is an updated version for 2020. Overall, the growing trend for the Blender project continues.

The blender.org Website

More popular than ever, the blender.org website and several of its subdomains have received a combined 23M unique visitors. That is a 35% increase from last year, approaching 2M visitors per month.



Half of the website traffic comes from 8 countries: USA, India, UK, Germany, Russia, Brazil, Japan, China (up 71%).

United States	20%	Japan	3.2%
India	7.7%	China	3.1%
United Kingdom	4.7%	Canada	2.9%
Germany	4.1%	France	2.9%
Russia	4%		
Brazil	3.5%	Other	46.9%

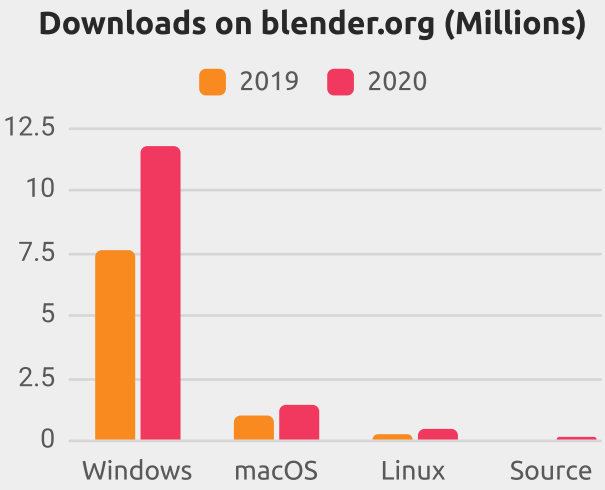
Blender Downloads Count

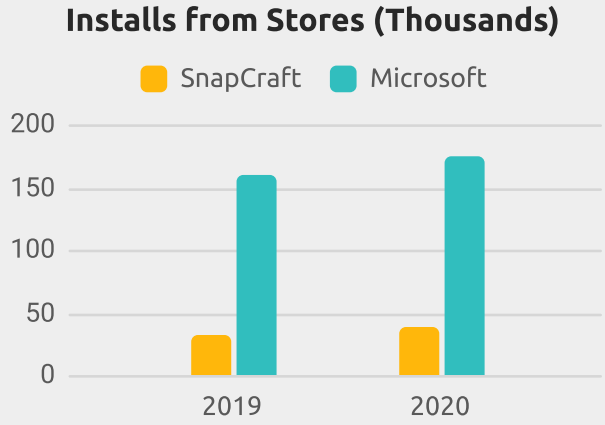
In 2020 Blender has been downloaded over 14M times from blender.org. With 4 major releases during the year, this is an average of 3.5M downloads per release.

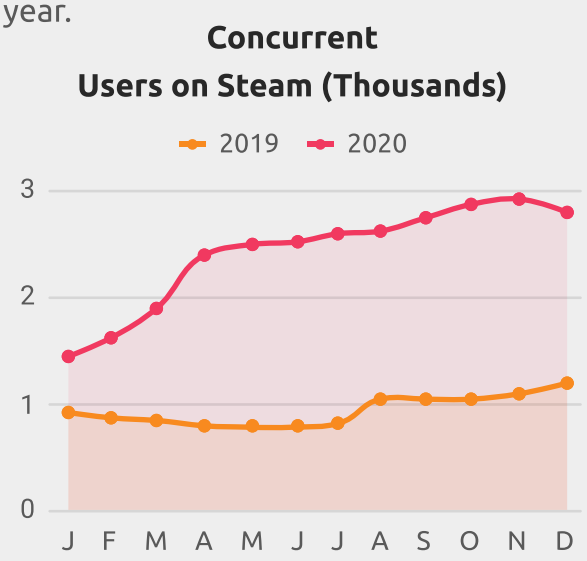
This is a significant increase across all operating systems.

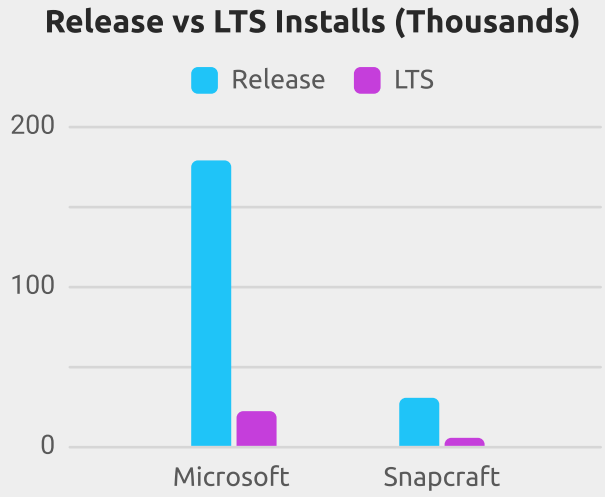
In addition to blender.org, Blender is available on other platforms such as the Microsoft Store, Steam and Snapcraft. Microsoft Store and Snapcraft provide information on the amount of installed Blender releases, which has slightly increased during 2020.

Steam uses a different metric: concurrent users. How many people are using Blender right now on Steam? Close to 3000, which is over twice as much as last year.







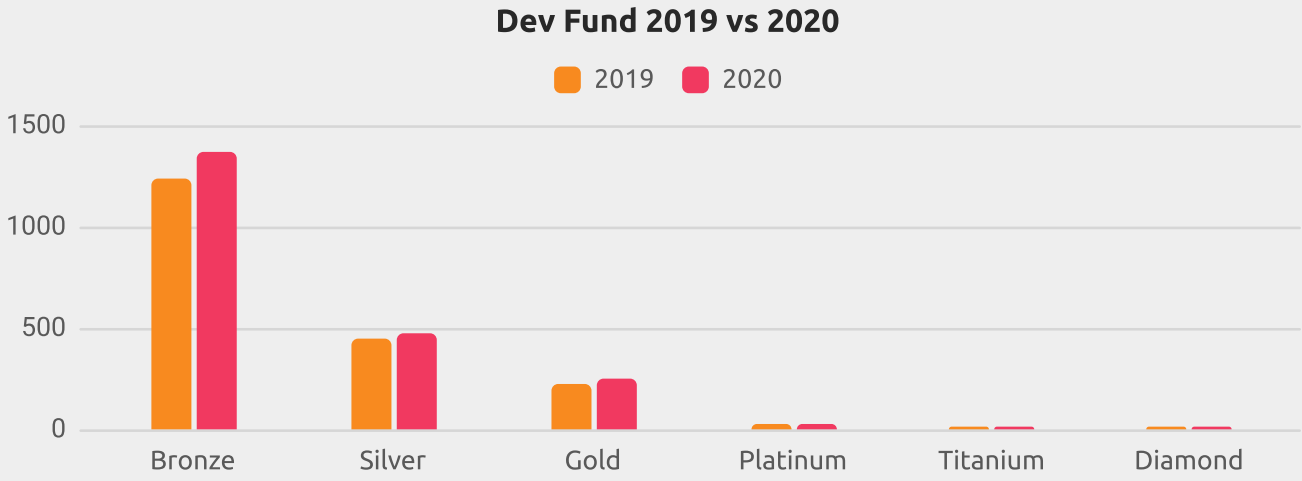


At the beginning of 2020, Blender Foundation announced the LTS project, with Blender 2.83 as a pilot release. Over the course of the year, this release has been updated 10 times, and will keep getting updates during 2021. Since it's targeted at a specific audience, the LTS release has significantly less installs, mostly through distribution platforms such as Microsoft Store, Snapcraft and Steam.

Blender Development Fund

The Blender Development Fund has grown, with more donations across most individual memberships. On the Corporate side, the growth was significant, especially thanks to 3 new Patron level memberships.

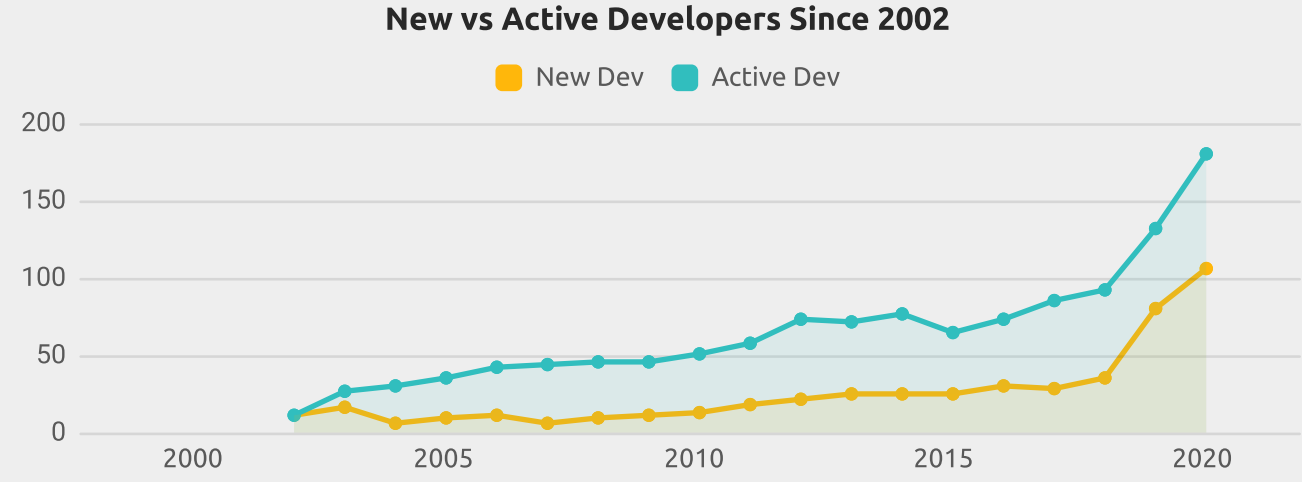
When looking at individual memberships, it's worth to point out that while traffic on blender.org and downloads have increased over 30%, Development Fund donations are up 10%.



Code Contributions

On the software side, Blender has seen an unprecedented number of 108 new contributors. This is a testament to how welcoming the Blender project is and also of how challenging 2020 was in terms of growth.

Overall this was another outstanding year for Blender's growth. More information and charts will be available on blender.org, in a dedicated Blender by the Numbers 2020 post.



To everyone who makes Blender possible:

Thank you.