

Prusa3D's Open-Source Manufacturing and Rapid Prototyping

Scaling Community-Driven Innovation in a Cost-Competitive Global Market

Rahul Guhathakurta¹ and Ruben Nag²

Introduction

In June 2025, Prusa Research a.s. signed a related-party report stating that the companies in its group develop and manufacture all components themselves ([Prusa Research a.s., 2025](#)). Eighteen months earlier, its founder, Josef Průša, had written: "You will find parts sourced from China in our printers because some components are manufactured in sufficient quantities only there" ([Průša, 2024](#)). The two statements are not necessarily inconsistent. The first is a legal description of who designs and makes the components that the group sells. The second is an engineer's admission that a printer is assembled from parts some of which no European firm makes at the required volume. The gap between them is a useful place to begin a case about how open the Prague-based maker of the Original Prusa 3D printers really is, and about what that openness does and does not protect.

¹ Rahul Guhathakurta is a Publisher at IndraStra Global Publishing Solutions Inc. He also serves as an Independent Director at NSE/BSE-listed NIntec Systems Limited. His work focuses on strategic analysis, supply chain strategy and resilience, risk modeling, and the intersection of technology, manufacturing, and enterprise decision-making.

² Ruben Nag is a Strategy Consultant at IBM, Kolkata, specialising in global finance and supply chain strategy. With over nine years of experience, he focuses on solving complex problems, making things happen and creating real value across industries.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Prusa Research grew out of the RepRap movement, in which printer designs were shared openly so that anyone could build, copy and improve them. By 2024 the group was processing about 300,000 orders a year and its team exceeded 1,000 people ([Prusa Research, 2025a](#)). Five of its operating companies reported combined revenue of about CZK 6.6 billion in 2024 before intra-group eliminations ([Prusa Research a.s., 2025](#); [Prusa Manufacturing a.s., 2025](#)). Over the same period, the desktop printer market changed around it. Lower-priced enclosed CoreXY printers, many made by firms headquartered in China, reached the market at a fraction of Prusa's price, and by the first quarter of 2026 four companies (Bambu Lab, Creality, Elegoo and Anycubic) shipped 88 per cent of entry-level units worldwide ([CONTEXT, 2026](#)). In August 2025 Průša published an essay entitled "Open hardware desktop 3D printing is dead – you just don't know it yet" ([Průša, 2025](#)). Four months later the company released the full CAD model of its CORE One printer under a new licence of its own design, the Open Community License (OCL), which permits use and modification but restricts commercial resale ([Prusa Research, 2025c](#)).

The case asks how an open-source hardware company can turn community-driven innovation into durable commercial advantage while scaling manufacturing, protecting quality and sustaining supply continuity in a market where lower-priced competitors can learn from what it publishes. It does so through the lens of what this case calls the qualification bottleneck: the firm's scarce capacity to test, validate and certify parts, suppliers and code. The proposition is that this capability may be both the main barrier to imitation and the main limit on resilience, because publishing a design makes copying cheaper for rivals but does not make switching suppliers cheaper for the firm itself. The case does not resolve that tension. It presents the evidence available on 15 August 2026, a quantitative teaching model and seven strategic options, and leaves the choice to the reader.

Background and Context

From RepRap to a Group of Specialised Companies

Josef Průša began building printers within the RepRap project before founding Prusa Research in Prague in 2012, according to the company's 2024 annual report ([Prusa Research a.s., 2025](#)). The firm's early products, the Original Prusa i3 family, were sold as kits and assembled printers, with printed parts, firmware and electronics published under open licences. The open-frame MK3S+ and the compact MINI were released with full manufacturing data for their circuit boards ([Prusa Research, 2026c](#)). Exhibit 1 summarises the developments relevant to this case.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 1: Prusa Research: Selected Developments, Before 2012 to August 2026

Before 2012	Josef Průša works within the open-source RepRap project; his printer designs are shared openly
2012	Prusa Research founded in Prague (per FY2024 annual report)
2016	PrusaSlicer (then Slic3r Prusa Edition) repository opened; AGPL-3.0 licence
2019-21	MINI and MK3S+ released with full PCB manufacturing data; group restructured into sister companies
Mar 2023	MK4 and XL announced; MK4 electronics data withheld pending a new licence (Průša, 2023)
2023	Production capacity raised to "nearly 200%"; over 150 hires (Průša, 2024)
Jan 2024	Průša states that some components are China-sourced; shift towards EU/US and in-house suppliers
Jul 2024	MK4 assembly and filament lines start at Printed Solid, Delaware
Nov 2024	CORE One announced (US\$1,199 assembled, excl. VAT); Perimeter Holding becomes sole owner (Dec)
Aug 2025	Průša essay: "Open hardware desktop 3D printing is dead"
Oct 2025	CORE One L launched; built in Prague and Delaware
Dec 2025	CORE One / CORE One L CAD released under Open Community License (OCL v1)
Jul 2026	Printed Solid renamed Prusa USA; US = 35% of revenue (Cnews.cz)
13 Aug 2026	XL+, CORE One+ (Gen 2) and CORE One L+ refresh at unchanged prices; data cut-off follows on 15 Aug 2026

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Note: Historical developments only; entries are drawn from company publications, statutory filings and dated press reports, each published on or before the 15 August 2026 data cut-off. The 2023 capacity and hiring figures and the January 2024 sourcing statement are Josef Průša's own statements, not audited data. The Cnews.cz revenue share is a press report.

(Source: [Průša, 2023](#); [Průša, 2024](#); [Prusa Research, 2024a](#); [Prusa Research, 2024b](#); [Prusa Research a.s., 2025](#); [Průša, 2025](#); [Prusa Research, 2025b](#); [Prusa Research, 2025c](#); [Cnews.cz, 2026](#); [Prusa Research, 2026b](#); compiled by the author)

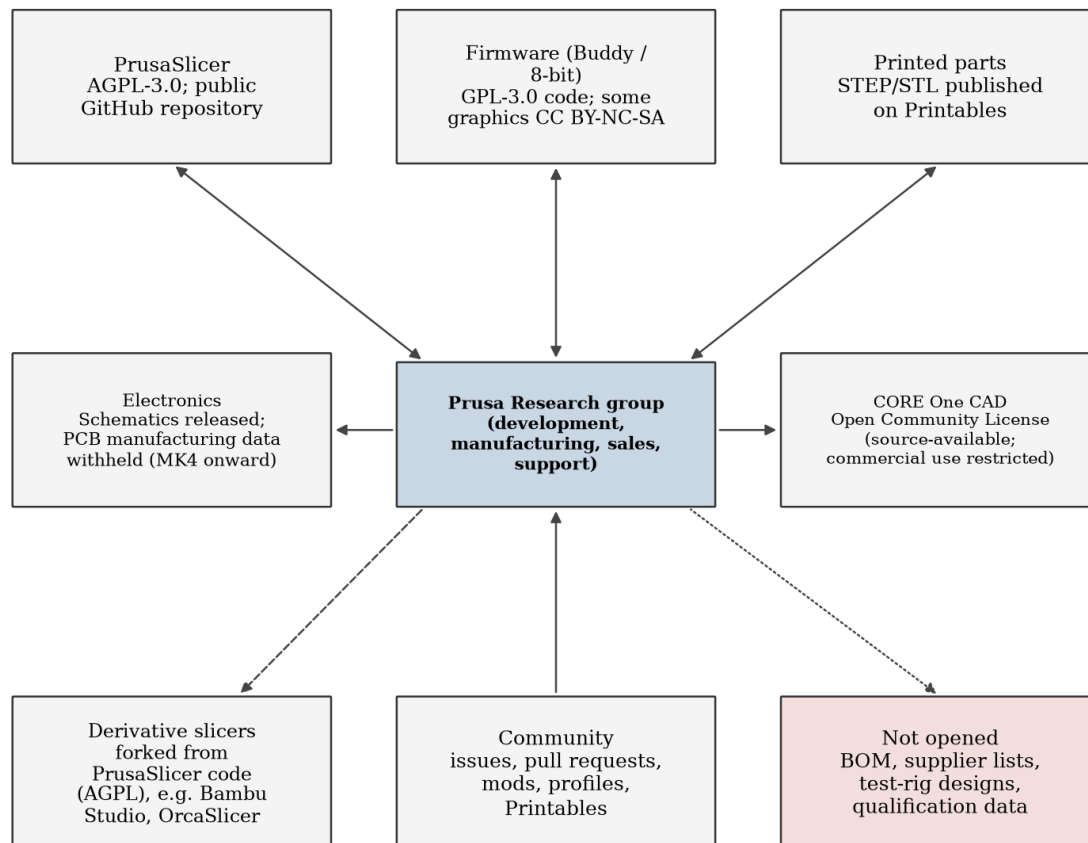
The corporate form changed as the business grew. By 2024 the commercial company, Prusa Research a.s., sold printers, upgrades, spare parts, filament and resins and provided round-the-clock customer support, while "production and development are provided by sister companies" (translation from the Czech original) ([Prusa Research a.s., 2025](#)). The sister companies named in the 2024 related-party report include Prusa Manufacturing a.s. (printer production), Prusa Development a.s. (research and development), Prusa Polymers a.s. (filament, resins and injection moulding), Prusa Circuits a.s. (circuit board assembly) and Prusa Global a.s., which controls the Delaware distributor formerly called Printed Solid, Inc. From 23 December 2024 the sole shareholder of Prusa Research a.s. was Perimeter Holding a.s. Josef Průša chairs the board of directors, Ondřej Průša is vice-chair and Michal Průša sits on the supervisory board ([Prusa Research a.s., 2025](#)). Consolidated group accounts were prepared but were not available in the public registry at the cut-off; the analysis therefore relies on the standalone filings of individual companies.

What Prusa Opens, and What It Keeps

Prusa's openness is layered rather than total. The slicer, PrusaSlicer, is published under the GNU Affero General Public License (AGPL-3.0), and its code has been reused by other firms; Bambu Studio and the community slicer OrcaSlicer descend from it ([The Verge, 2025](#)). Firmware for the current 32-bit Buddy boards is published under the GNU General Public License, while some graphics carry a non-commercial Creative Commons licence. Printed parts are published as STEP and STL files. For the MK4, MK4S, CORE One and CORE One L, the company's open-source page lists schematics as released but manufacturing data and most bills of materials as withheld ([Prusa Research, 2026c](#)). In March 2023 Průša explained that the MK4's electronics would be held back until a licence existed that would limit what he described as direct cloning ([Průša, 2023](#)). Critics in the open-hardware community argued that this weakened the case for calling the product open at all ([Weinberg, 2023](#)). The December 2025 OCL release of the CORE One CAD model was presented by Prusa as open-sourcing; critics described the licence as source-available, because it restricts commercial use ([Open Community Licence, 2025](#)). Exhibit 2 maps these layers.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 2: Prusa's Open-Source Ecosystem and Licence Layers at the Cut-off


Note: Status as shown on Prusa's open-source page (Internet Archive capture of 29 July 2026) and the GitHub repositories at 15 August 2026. 'Not opened' lists categories that the page does not report as published; it is not a claim about their content. Arrows indicate the main direction of flows: two-headed arrows mark publication with feedback; the dashed arrow marks code reuse by third parties; the dotted arrow marks material retained in-house. The Open Community License is described by Prusa as open-sourcing and by critics as source-available; the classification is contested.

(Source: [Prusa Research, 2026c](#); [Prusa Research, 2025c](#); [Open Community Licence, 2025](#); [Prusa Research, 2026f](#); [Prusa Research, 2026g](#); [The Verge, 2025](#); diagram by the author)

The classification matters for the case because each layer has a different economic function. Published slicer code lowers the cost for any rival to build a capable slicer. Published printed-part designs let owners repair and modify machines, which supports the firm's long service horizon. Withheld manufacturing data, supplier lists, test-rig designs and qualification records are the parts of the system that a copier would have to rebuild at its own expense. [Bonvoisin et](#)

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

al. (2017) argue that the "source" of open hardware must include the documentation needed to make the object, not only to view it; by that standard, the parts Prusa withholds are precisely those that convert a design into a manufactured product.

The Competitive Field at the Cut-off

The desktop segment in which Prusa sells is no longer the hobbyist niche of the early RepRap years. CONTEXT, an industry analysis firm, reported that entry-level printer shipments (systems under US\$2,500) grew by 39 per cent year on year in the first quarter of 2026 and accounted for 54 per cent of all printer system revenue; the four largest vendors held 88 per cent of entry-level units, and Flashforge grew fastest, by more than 120 per cent (CONTEXT, 2026). CONTEXT does not report Prusa's share, and Průša's January 2024 reference to roughly 10 per cent of the home segment rested on unnamed estimates (Průša, 2024); no comparable share figure is used in this case. Creality's Hong Kong prospectus, published on 20 May 2026, provides audited figures for one rival (Creality, 2026b); Bambu Lab is privately held and figures attributed to it in the press are unaudited.

Exhibit 3 lists dated prices for selected printers. The comparison is imperfect by design: tax treatment, bundles and promotions differ, and a printer listed at US\$309 is not necessarily a substitute for one at US\$1,203. What the table does show is the scale of the price gap that Prusa's positioning must justify, and the dates show that the gap persisted through 2025 and 2026 despite tariff changes in the United States (Tom's Hardware, 2025a; Bambu Lab, 2025c).

Exhibit 3: Selected Enclosed and Semi-enclosed Desktop Printers: Dated Prices and Characteristics

Model (maker)	Price, US\$ (date and basis)	Build volume, mm	Openness and production notes
CORE One+ (Prusa)	1,202.78 assembled; 925 kit (store page, 14 Aug 2026; tax basis not stated)	250 × 220 × 270	Schematics and firmware public; CAD under OCL; built in Prague and Delaware
MK4S (Prusa, open-frame reference)	925 assembled; 657.40 kit (store page, 8 Aug 2026)	250 × 210 × 220	Printed parts and firmware public; manufacturing data withheld
P2S (Bambu Lab)	549 excl. tax; Combo 799 (launch, 14 Oct 2025)	256 × 256 × 256	Bambu Studio is an AGPL slicer derived from PrusaSlicer code; authorisation-control firmware introduced Jan 2025
H2D (Bambu Lab)	1,899–3,499 (launch, 25 Mar 2025); US prices adjusted May 2025	350 × 320 × 325	As above

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Model (maker)	Price, US\$ (date and basis)	Build volume, mm	Openness and production notes
K2 Plus Combo (Creality)	1,204.20 with accessory pack (store page, 10 Jul 2026)	350 × 350 × 350	Openness not assessed for this case
Centauri Carbon (Elegoo)	309.00 (store page, 31 Jul 2026)	256 × 256 × 256	Openness not assessed for this case
Kobra S1 Combo (Anycubic)	from 399 (store page, 8 Jul 2026)	250 × 250 × 250	Openness not assessed for this case

Note: Prices are as displayed on the dated official page or launch announcement and are not like-for-like: tax treatment, bundled accessories, promotions and shipping differ, and prices in other markets differ. Build volumes are as stated by manufacturers and are not independently measured. Inclusion does not imply that the models compete for the same buyers. MK4S build volume is per Prusa's specification.

(Source: [Prusa Research](#), 2026d; [Prusa Research](#), 2026e; [Bambu Lab](#), 2025a; [Bambu Lab](#), 2025b; [Bambu Lab](#), 2025c; [Bambu Lab](#), 2025d; [Creality](#), 2026a; [Elegoo](#), 2026; [Anycubic](#), 2026; [The Verge](#), 2025)

Prusa's own response included product renewal rather than price reduction. The CORE One, an enclosed CoreXY printer, launched on 19 November 2024 at US\$1,199 assembled excluding VAT ([Prusa Research](#), 2024b); the larger CORE One L followed on 31 October 2025 and was built in both Prague and Delaware ([Prusa Research](#), 2025b). On 13 August 2026, two days before the cut-off, the company announced the XL+, CORE One+ and CORE One L+ refresh at unchanged prices ([Prusa Research](#), 2026b). In July 2026 the Delaware business was renamed Prusa USA; a Czech technology outlet reported that the United States produced more than a third of revenue, 35 per cent ([Cnews.cz](#), 2026).

Problem Statement

The question for Prusa's leadership at the cut-off can be stated simply: how to keep earning a premium for an open, serviceable, European-made printer when rivals can learn from its published work, sell at a fraction of its price and grow faster. Beneath that question lie three tensions that this case treats as the core of the problem.

The first is between openness and appropriability. Publishing code and designs attracts users and contributors and supports repair, but it also lowers rivals' development costs ([Teece](#), 1986; [Henkel](#), 2006). Prusa has already narrowed what it publishes for electronics and has created a licence that restricts commercial reuse. The extent of further narrowing, and its effect on community goodwill, is unresolved.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

The second is between cost competitiveness and quality. The audited goods margin of the sales company was 29.5 per cent in 2024 (see Theme B), which leaves limited room to absorb price cuts, while the company's own account of manufacturing stresses testing, custom test rigs and close supplier control (Průša, 2024). Lowering cost by changing suppliers or components brings back exactly the qualification work that protects quality.

The third is between scale and supply continuity. Prusa has integrated circuit board assembly, injection moulding, filament and printed parts, and has added a U.S. assembly site. It still buys electronic components, stepper motors and other parts from outside suppliers, some located in China (Průša, 2024). Opening designs does not make those inputs easier to replace. The decision is therefore not only which market position to hold, but which capabilities to fund so that the position remains viable when a supplier, a tariff or a rival changes. The case invites a strategy that balances innovation, manufacturing quality, cost competitiveness and supply continuity over a 24-month horizon.

Methodology

This case was prepared as a decision case from public sources. The data cut-off is 15 August 2026: only information published on or before that date is used to establish facts. The cut-off is distinct from the drafting date (October 2026) and from the publication date. Each source in the reference list carries its own publication date; web pages without a dateline are cited through Internet Archive captures made on or before the cut-off. Material published after the cut-off, including reader comments under articles dated earlier, has been excluded.

Evidence falls into five categories that the text keeps apart. Verified facts are drawn from audited statutory filings, company publications and public code repositories. Historical developments are dated events reported by the company or by the press. Interpretations are the author's readings of that evidence and are marked as such. Hypothetical inputs are values assumed for the teaching model and are labelled as teaching-case assumptions wherever they appear. Prospective outcomes are results of the model under those assumptions and are not forecasts of Prusa's performance.

Financial data come from the 2024 annual filings of five group companies in the Czech public registry, all filed on 15 October 2025. Because several of these filings are scanned images, they were read by optical character recognition, and values that conflicted between pages were checked against the page images. Community contribution data were retrieved from the GitHub interface for the PrusaSlicer and Prusa-Firmware-Buddy repositories, limited to items created between 1 January 2023 and 15 August 2026. Tariff lines were checked in the U.S. Harmonized

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Tariff Schedule ([United States International Trade Commission](#), 2026). Competitor prices are taken from dated official pages or launch announcements.

The analysis draws selectively on established frameworks. The resource-based view and Teece's (1986) account of complementary assets frame the question of what Prusa can appropriate from its innovations. The concepts of selective revealing ([Henkel](#), 2006) and open innovation ([Chesbrough](#), 2003) frame the choice of what to publish. Transaction cost economics informs the make-or-buy discussion, design for manufacture and assembly informs the cost discussion, total cost of ownership ([Ellram](#), 1993) informs the buyer's perspective, and the resilience literature ([Sheffi & Rice](#), 2005; [Tomlin](#), 2006) informs the inventory and sourcing analysis. The case also proposes its own lens, the qualification bottleneck, stated as three propositions for students to test. First, the capability to test and validate parts, suppliers and code is more difficult to imitate than published designs. Second, the same capability limits how quickly the firm can substitute suppliers or absorb community contributions. Third, investment in qualification capacity therefore serves both differentiation and resilience, which may change how such investment should be evaluated. The lens builds on, but is distinct from, the complementary-assets and selective-revealing arguments, which concern what a firm discloses rather than what limits its own flexibility. An earlier teaching case on the Original Prusa i3 ([Hu](#), 2021) examined the cost of printing parts compared with injection moulding; the present case addresses a different question at a later stage of the firm's development.

No interviews were conducted, and no conversation, quotation or decision is attributed to any person unless it appears in a cited public source. No supplier is named for any printer component because none is publicly identified. The quantitative model uses contribution margin, break-even volume, landed cost, buyer total cost of ownership and one-way sensitivity analysis. Expected-loss calculations appear only as stress tests, and break-even probabilities are calculated instead of invented probabilities. Monte Carlo simulation was not used, because the uncertain inputs are not observable enough to justify fitted distributions. Conflict of Interest: No conflict confirmed.

Case Narrative and Analysis

Theme A: Open Source as a Commercial Strategy

Open-source hardware firms typically earn money from something other than the design itself: from manufacturing, service, consumables, a platform or a brand ([Pearce](#), 2017). [West & Kuk](#) (2016) showed how MakerBot used an open community repository to build demand, and then closed its own hardware once the community had served that purpose. Prusa's trajectory differs

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

in an important way. It has not closed its slicer or firmware, and in 2025 it extended openness to full CAD, but it has kept the manufacturing layer and set the terms of commercial reuse.

The firm's revenue lines suggest where the money is made. In 2024 Prusa Research a.s. reported CZK 3,435.8 million of sales of goods (printers, parts and materials bought from sister companies and resold) against CZK 216.9 million of sales of own products and services, with 93 per cent of goods sales made abroad ([Prusa Research a.s., 2025](#)). Prusa Polymers produced more than half a million filament spools ([Prusa Polymers a.s., 2025](#)). These figures do not reveal the margin earned on each printer, but they confirm that the business is a hardware and materials business supported by software, not a software business with hardware attached.

The interpretation offered here, and open to challenge, is that Prusa's openness works mainly as a demand-side and service-side asset: it lowers the buyer's perceived risk of lock-in, enables repair and supports a large installed base of printers that use Prusa materials and spare parts. Its value as a defence against imitation is weaker. Průša's own 2025 essay argues as much, claiming that published work was reused by rivals with lower costs and that patent filings derived from open designs could restrict the original publisher ([Průša, 2025](#)). Those claims are his; they were reported, not adjudicated ([Tom's Hardware, 2025b](#)).

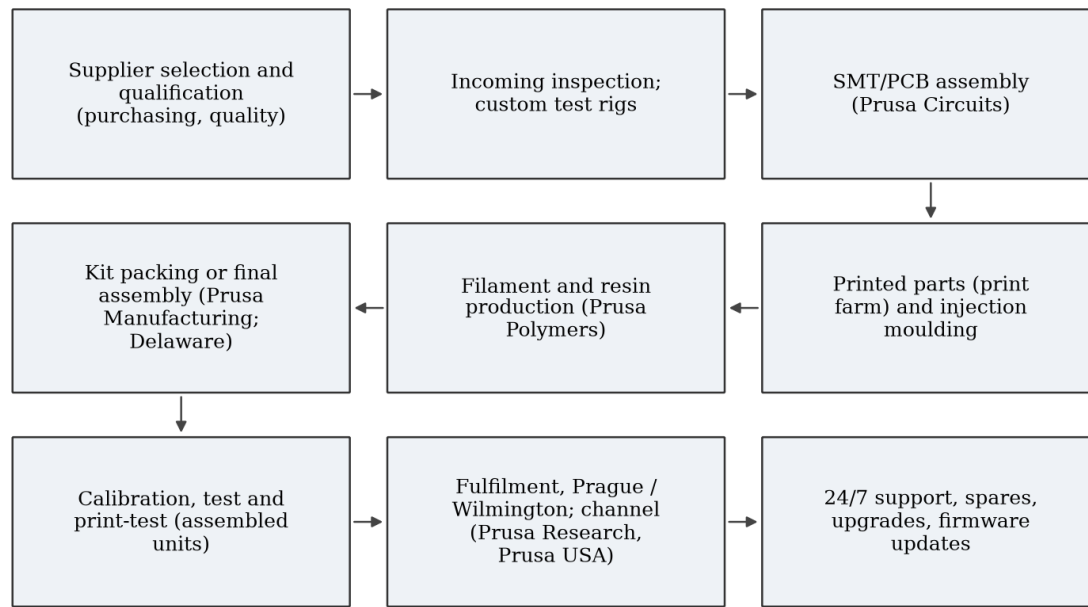
Theme B: Scaling Manufacturing and Quality

Prusa describes its manufacturing as a set of capabilities built around test and control rather than around a single factory. In January 2024 Průša reported that production capacity had been raised to "nearly 200%" in the second half of 2023 and that more than 150 people had been hired that year ([Průša, 2024](#)). The group operates its own surface-mount line for circuit boards, injection-moulding lines, a print farm for plastic parts and a department that builds custom test machines. Exhibit 4 places these activities in sequence.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 4: Manufacturing, Quality and Service Workflow Across the Prusa Group



Feedback loop: field failures and community reports return to qualification and design (not drawn)

Note: Simplified sequence assembled from company descriptions and the activity statements of each group entity in its 2024 annual report. The order of steps is a teaching simplification: printed parts, PCBs and filament run in parallel, not in series. Supplier identities are not disclosed and none is implied.

(Source: [Průša, 2024](#); [Prusa Research, 2024a](#); [Prusa Manufacturing a.s., 2025](#); [Prusa Circuits a.s., 2025](#); [Prusa Polymers a.s., 2025](#); [Prusa Research a.s., 2025](#); diagram by the author)

The audited filings make the scale visible. Prusa Manufacturing, which describes its activity as the production of 3D printers, reported revenue of CZK 2,115.5 million in 2024, up from CZK 1,686.5 million, and an operating result of CZK 66.3 million, up from CZK 9.5 million, with an average of 276 employees in both years ([Prusa Manufacturing a.s., 2025](#)). Its consumption of materials and energy was CZK 1,573.1 million, and it reported dispatching about 1.38 million items in 2024. Its purchases from related parties were small relative to that consumption, which indicates that most material was bought from outside the group. Prusa Circuits, the circuit board company, moved from an operating loss of CZK 5.1 million to a profit of CZK 7.8 million on revenue of CZK 224.2 million ([Prusa Circuits a.s., 2025](#)). Exhibit 5 brings together the five companies.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 5: Audited 2024 Results of Five Prusa Group Companies (CZK million)

Entity (role)	Revenue 2024 (2023)	Operating result 2024 (2023)	Net result 2024	Average staff 2024 (2023)
Prusa Research a.s. (sales, support)	3,652.7 (2,900.2)	149.8 (145.6)	47.3	135 (113)
Prusa Manufacturing a.s. (printer production)	2,115.5 (1,686.5)	66.3 (9.5)	49.8	276 (276)
Prusa Polymers a.s. (filament, resins, moulding)	314.0 (n/a)	21.1 (0.8)	18.5	159 (119)
Prusa Development a.s. (R&D)	262.8 (196.0)	74.8 (n/a)	68.9	79 (77)
Prusa Circuits a.s. (PCB assembly)	224.2 (143.0)	7.8 (−5.1)	7.5	10 (8)
Simple sum (not consolidated)	6,569.2	319.8	192.0	659

Note: Standalone statutory accounts, audited, filed 15 October 2025. Large intra-group sales are included in several lines, so the simple sum overstates group revenue and must not be read as a consolidated figure; consolidated statements were not public at the cut-off. The scanned filings were read by optical character recognition and two conflicting values (Prusa Research's 2023 own-product sales and 2023 average staff) were checked against the page images. Further derived values used in the text: Prusa Research goods margin (sales of goods less cost of goods sold) 29.5% in 2024; Prusa Manufacturing inventory equal to about 113 days of materials and energy consumption in 2024 (about 145 days in 2023). Staff of the other group companies, including Prusa USA, are not shown, which is why the total is far below the more than 1,000 people the company reports. n/a = not extracted.

(Source: [Prusa Research a.s., 2025](#); [Prusa Manufacturing a.s., 2025](#); [Prusa Polymers a.s., 2025](#); [Prusa Development a.s., 2025](#); [Prusa Circuits a.s., 2025](#); [Prusa Research, 2025a](#); calculations by the author)

Three readings follow, each an interpretation. First, profitability in 2024 was spread across the group in a way that depends on transfer prices; the low operating margin of the sales company (4.1 per cent of turnover) says little about the economics of a printer. Second, the manufacturing company's inventory of CZK 488.2 million at the end of 2024 equalled about 113 days of materials and energy consumption, down from about 145 days a year earlier; the group was therefore carrying a substantial buffer, though not one that can be allocated to specific components from the filings. Third, a sales company employing 135 people turned over CZK 3.65 billion; press reports that described Prusa Research as a firm of 135 employees ([E15, 2025](#)) confused the legal entity with the group.

Quality problems illustrate the qualification bottleneck. Průša described a defect in which stepper motors for the MK4 became noisy. The firm spent about two weeks building a test jig to detect the fault, sent the rig to the supplier and returned affected motors. He wrote that supplier process changes cause such issues "several times a month" ([Průša, 2024](#)). The episode shows that a supplier change can be invisible in the design files, visible only in testing, and

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

expensive to detect. It also shows that the knowledge built in response (the test rig and its threshold values) is exactly the kind of asset Prusa does not publish.

The U.S. site adds a second dimension. Assembly of the MK4 and filament production began at the Delaware site in July 2024 with benches and tools identical to those in Prague ([Prusa Research, 2024a](#)). In July 2026 Tom's Hardware reported that U.S. printers still relied on parts made in Prague and quoted output across both sites as well over 10,000 printers a month; the output figure is the journalist's account, not an audited number ([Tom's Hardware, 2026](#)). Delaware therefore localises final assembly and customer proximity; it does not yet localise component supply.

Theme C: Community-Driven Research and Development

A central claim of open hardware is that a community contributes improvements a firm would otherwise have to pay for. The evidence for Prusa is mixed and depends on what is counted. Exhibit 6 sets out dated GitHub activity. Between 1 January 2023 and the cut-off, 250 distinct authors opened 457 pull requests (proposed code changes) in PrusaSlicer, but only 13 were merged through GitHub; in the same period users opened 5,654 issues. In the Buddy firmware, 93 authors opened 347 pull requests, of which 173 were merged, and users opened 2,207 issues ([Prusa Research, 2026f](#); [Prusa Research, 2026g](#)).

Exhibit 6: Community Contribution and Validation Matrix, January 2023 to the Cut-off

Contribution channel	Dated evidence (1 Jan 2023–15 Aug 2026)	Validation burden on the firm (interpretation)	Appropriability (interpretation)
Slicer code (PrusaSlicer, AGPL-3.0)	457 pull requests opened by 250 distinct authors; 13 merged through GitHub (2.8%); 5,654 issues opened	High: changes touch print quality across all printer profiles; maintainers often re-implement ideas rather than merge	Low for code (forks are lawful); higher for tuned printer profiles tied to Prusa hardware
Firmware (Buddy boards)	347 pull requests opened by 93 distinct authors; 173 merged through GitHub; 2,207 issues opened	High: safety-relevant (heaters, thermal runaway) and hardware-specific	Moderate: value depends on Prusa's electronics
Printed-part modifications and models (Printables)	Not quantified for this case	Low to moderate: optional, user-installed	Low: designs are portable
Bug reports and field feedback	Included in issue counts above	Moderate: triage cost; high information value	High: insights accrue to the firm that can act on them

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Contribution channel	Dated evidence (1 Jan 2023–15 Aug 2026)	Validation burden on the firm (interpretation)	Appropriability (interpretation)
CAD reuse under OCL (from Dec 2025)	Too recent for outcome data at the cut-off	Not applicable to the firm; borne by the reuser	Bounded by licence terms on commercial resale

Note: GitHub counts were retrieved through the public API with creation dates up to 15 August 2026. Merge counts understate incorporation because maintainers frequently implement contributions manually. Author-association metadata cannot reliably separate employees from external contributors because organisation membership may be private; counts therefore include some staff activity. Interpretive columns are the author's assessment.

(Source: [Prusa Research, 2026f](#); [Prusa Research, 2026g](#); [Prusa Research, 2025c](#); calculations by the author)

Two cautions apply. Merge counts understate incorporation, because maintainers often re-implement a contributed idea rather than merge the contributor's code. Conversely, the counts include some activity by Prusa staff, because organisational membership on GitHub can be private. With those cautions, the pattern is still informative. In the slicer, which affects print quality on every supported printer, community code rarely enters the product directly; the community's larger contribution appears to be problem reports, which are information rather than finished work. In the firmware, contribution rates are higher, but every change touches heaters, motors or safety logic and must be tested on real hardware.

The interpretation proposed is that community research and development redistributes cost more than it removes it. Ideas and defect reports arrive at low cost, but the firm bears the validation cost, which grows with the variety of contributions and hardware. This is consistent with the qualification-bottleneck lens: the scarce resource is not ideas but the testing capacity to turn them into dependable products. It also suggests why the slicer's value to Prusa lies partly in the printer profiles, which encode tested settings for Prusa machines and materials and are less useful on other hardware.

Theme D: Cost Competitiveness and the Price Gap

Prusa's costs are not public at the product level, so the case uses an illustrative unit model. Every value in it is a teaching-case assumption except the price anchor, which is the CORE One's launch price of US\$1,199 excluding VAT ([Prusa Research, 2024b](#)). Contribution per unit is defined in Equation 1, where p is the list price, d the average discount, f payment and channel fees and v variable cost per unit.

$$c = p_{\text{net}} - v, \quad p_{\text{net}} = p(1 - d - f) \quad (1)$$

With an assumed 6 per cent discount and 2 per cent fees, the net price is US\$1,103.08. An assumed variable cost of US\$740, comprising US\$560 of components and US\$180 of labour, packaging, logistics and warranty, gives a contribution of US\$363.08, or 32.9 per cent of net

Open Access Cases (OAC)

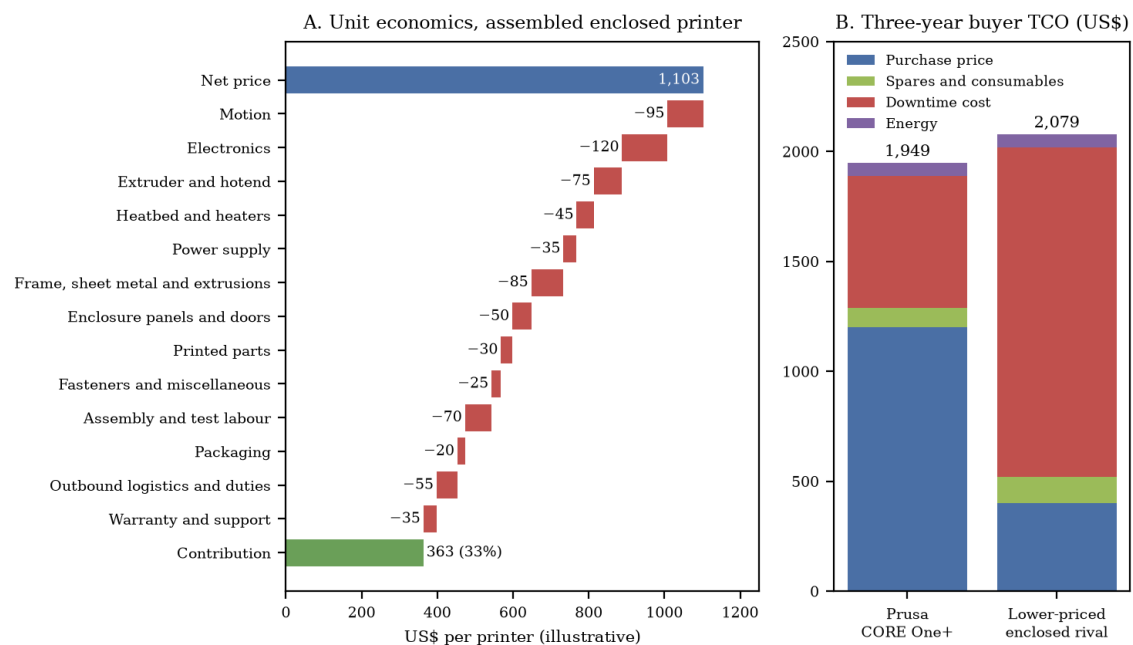
Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

price (Exhibit 7, Panel A; teaching-case assumptions). At an assumed US\$25 million of annual fixed cost, the break-even volume is about 68,900 printers a year. The 32.9 per cent contribution ratio is of the same order as the audited 29.5 per cent goods margin of the sales company, which is a useful plausibility check but not a validation, because the two measures are defined differently.

A buyer does not pay only the purchase price. Equation 2 defines total cost of ownership (TCO) over N years as the purchase price P_0 plus annual spares and consumables S , downtime hours H multiplied by the value of an hour w , and energy E (Ellram, 1993).

$$TCO = P_0 + \sum_{t=1}^N (S_t + H_t w + E_t) \quad (2)$$

Exhibit 7: Illustrative Unit Economics and Three-Year Buyer Total Cost of Ownership



Note: Teaching-case assumptions throughout. Panel A uses a list price of US\$1,199 (the CORE One launch price excluding VAT, used only as an anchor), less a 6% average discount and 2% payment fees, and an assumed cost structure that is not Prusa's; actual bill-of-materials and conversion costs are not disclosed. Panel B assumes three years of use, US\$25 per hour of downtime and 8 versus 20 downtime hours a year; the rival is an unnamed lower-priced enclosed CoreXY printer at US\$399. Changing the downtime rate reverses the ranking (see text).

(Source: Author's teaching model; price anchor from [Prusa Research, 2024b](#))

Under the assumptions in Exhibit 7, Panel B, a CORE One+ at US\$1,199 costs its owner about US\$1,949 over three years, against about US\$2,079 for an unnamed lower-priced enclosed rival at US\$399, if downtime is valued at US\$25 an hour and the rival suffers 20 hours of

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

downtime a year against eight (teaching-case assumptions). The ranking is fragile. With the other assumptions unchanged, the rival has the lower TCO whenever an hour of downtime is worth less than about US\$21. For a hobbyist printing at weekends this is plausible; for a print farm or a laboratory it is not. The calculation therefore points to segmentation rather than to a single verdict: Prusa's premium is defensible in segments that value uptime, service and repair, and difficult to defend in segments that value purchase price.

The price evidence is consistent with that reading. Bambu Lab launched the P2S at US\$549 excluding tax in October 2025 ([Bambu Lab, 2025d](#)); Elegoo listed the Centauri Carbon at US\$309 in July 2026 ([Elegoo, 2026](#)); Prusa's MK4S, an open-frame design, was on sale for US\$925 assembled in August 2026 ([Prusa Research, 2026e](#)), after a 20 per cent summer promotion earlier in the year ([Prusa Research, 2026a](#)). Price promotion on an older model, product renewal at unchanged prices and an expanded U.S. presence are the observable responses; there is no public record of a decision to match rivals' prices.

The August 2026 refresh adds a further observation. Prusa presented the Gen 2 changes as improvements to print quality and ease of use and kept prices unchanged ([Prusa Research, 2026b](#)); in effect, it chose to add value at a constant price rather than to lower the price of a constant product. Whether that choice suits every segment is open to debate. In professional settings, an incremental improvement in reliability may be worth more than a price cut, as the TCO calculation suggests. Among first-time buyers comparing listed prices online, the same improvement may be invisible. The firm's kits, which remain on sale at lower prices than assembled printers ([Prusa Research, 2026d](#)), already provide one form of price segmentation, but they shift assembly time to the buyer rather than lowering the cost of the machine.

Theme E: Intellectual Property, Licensing and Commercial Sustainability

Prusa's licensing has moved in two directions. For software, it has stayed with copyleft licences that oblige derivative works to remain open; AGPL-3.0 means that firms building on PrusaSlicer must publish their changes. For hardware, it has moved from fully open designs to selective release and then to the OCL, which grants broad rights to use, modify and share the CORE One CAD, including for internal production, but requires agreement for commercial sale of machines or derived designs ([Prusa Research, 2025c](#)). Henkel (2006) describes such behaviour as selective revealing: firms disclose what builds standards and goodwill and keep what differentiates.

The commercial sustainability of this mix depends on enforcement and on the community's response. The OCL's restrictions bind only those who can be reached and who accept the licence; a rival that does not use the CAD files but reverse-engineers a printer is not constrained by it. The licence's critics argued that calling it open source dilutes the term ([Open Community Licence, 2025](#)). Průša's position is that unconditional openness has subsidised competitors

Open Access Cases (OAC)

(Průša, 2025). Both arguments can be correct at once: openness may have built the brand and installed base that support Prusa's premium, while also reducing rivals' design costs. For the purposes of this case, the relevant question is which layer of openness yields more value to Prusa than to its rivals, and whether that changes as the market shifts from early adopters to price-sensitive buyers.

Theme F: Integrated Supply-Chain Analysis

Theme F treats the supply chain as an integrated system in seven parts: the component dependency map, the difference between openness and substitutability, landed cost by geography, inventory and buffers, the choice among making, buying and dual sourcing, tariffs and U.S. localisation, and a combined risk view.

F1. Component-Category Dependencies

Public evidence allows a dependency map only at the category level. Exhibit 8 records what is documented, what is inferred and what is unknown. The group makes printed parts, injection-moulded parts, filament and assembled circuit boards. It buys electronic components; Prusa Circuits held CZK 173.1 million of component stock at the end of 2024 (Prusa Circuits a.s., 2025), an amount that implies large purchased inventories of chips and passive parts. Stepper motors came from an external supplier in the 2023 incident. For hotends, heatbeds, power supplies, sheet metal, extrusions and fasteners, no public source identifies whether parts are made in-house or bought, and none identifies a supplier.

Exhibit 8: Component-Category Dependency Matrix

Category	Public evidence of where it is made or sourced	Evidence status	Substitution difficulty (teaching assessment)
Printed plastic parts	Own print farm	Documented	Low: in-house, design files public
Injection-moulded parts	In-house moulding lines; Prusa Polymers expanded moulding in 2024	Documented	Moderate: tooling lead time
Filament	Prusa Polymers (Prusament), over 0.5 million spools in 2024	Documented	Low for the printer; moderate for the brand
Printed circuit board assembly	Own SMT line (Prusa Circuits)	Documented	Low for assembly; see next row
Electronic components on boards	Purchased; Prusa Circuits held CZK 173 million of component stock at end-2024	Inferred from inventory	High: part-specific qualification; long lead times
Stepper motors	External supplier; a 2023 noise defect required a new test rig and returns	Documented (supplier unnamed)	Moderate to high: acoustic and thermal behaviour must be re-qualified

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Category	Public evidence of where it is made or sourced	Evidence status	Substitution difficulty (teaching assessment)
Hotend, extruder, heatbed, power supply, sheet metal, extrusions, fasteners	Not disclosed	Unknown	Assumed moderate; to be tested in class
Parts made in China (unspecified)	Průša (2024): some components are made in sufficient quantity only in China	Documented at aggregate level	Unknown by category

Note: No supplier is named because none is publicly identified for these printer components. 'Inferred' means a reasoned reading of a filing, not a disclosure. The related-party report states that group companies develop and make all components themselves, while Průša (2024) states that some parts are China-sourced; the matrix records both and leaves the reconciliation as an analytical question. Substitution difficulty is the author's teaching assessment.

(Source: [Průša, 2024](#); [Prusa Research a.s., 2025](#); [Prusa Circuits a.s., 2025](#); [Prusa Polymers a.s., 2025](#); [Prusa Research, 2025b](#); assessment by the author)

F2. Openness Is Not Substitutability

An open design can be read by anyone, but that does not make its inputs interchangeable. A published schematic names a microcontroller family, not a qualified alternative; a published motor specification does not guarantee that a second supplier's motor will be acoustically and thermally equivalent. The motor incident shows the cost of discovering non-equivalence after a change. Openness reduces the cost of imitation for a rival who is willing to qualify its own suppliers; it does not reduce Prusa's cost of qualifying a second source. The asymmetry is the core of the qualification-bottleneck proposition: a firm that publishes designs gives away part of its design advantage but not its qualification burden.

F3. Landed Cost and Geographic Sourcing

Comparing sources on purchase price alone overstates the advantage of low-cost regions. Equation 3 defines landed cost LC as the sum of supplier price P, freight F, duty D, inventory carrying cost I and other costs O, which include currency risk, minimum-order penalties and the amortised cost of qualification.

$$LC = P + F + D + I + O \quad (3)$$

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 9: Illustrative Landed Cost by Sourcing Region (Ex-works Price Index, EU = 100)

Sourcing region	Price P	Freight F	Duty D	Inventory carrying I	Other O (FX, MOQ, qualification)	Landed cost LC
EU (e.g. CZ/DE)	100	2.0	0.0	0.3	1.5	103.8
USA	110	6.0	0.0	0.4	3.3	119.7
China	72	7.0	2.7	0.5	6.0	88.2
Other Asia (e.g. VN, TW)	82	7.0	1.0	0.5	6.5	97.0

Note: Teaching-case assumptions throughout, for a generic purchased mechanical component delivered to a Czech plant; the figures are not Prusa data and do not describe any supplier. Duty values are placeholders: component tariff lines vary and were not determined for this case. For finished printers, the U.S. general rate for HTS 8485.20.00 is 3.1%, and an additional 12.5% applies to China-origin goods under subheading 9903.05.31; reported Section 301 duties of 25% on this line are from a secondary source and should be checked. FX = currency risk premium; MOQ = minimum order quantity penalty.

(Source: Author's teaching model; tariff lines from [United States International Trade Commission](#), 2026)

In the illustrative case in Exhibit 9, a component priced 28 per cent below the European reference has a landed cost about 15 per cent lower once freight, duty, carrying cost and other costs are added (teaching-case assumptions). A U.S. source is the most expensive under these assumptions. The result is sensitive to the qualification term, which is the term most firms underestimate; doubling it for the lower-cost regions narrows the gap further. For finished printers, the U.S. tariff schedule at the cut-off listed a general duty of 3.1 per cent on heading 8485.20.00 and an additional 12.5 per cent on Chinese-origin goods under subheading 9903.05.31 ([United States International Trade Commission](#), 2026); a reported 25 per cent Section 301 duty on the same line comes from a secondary source and should be checked before use.

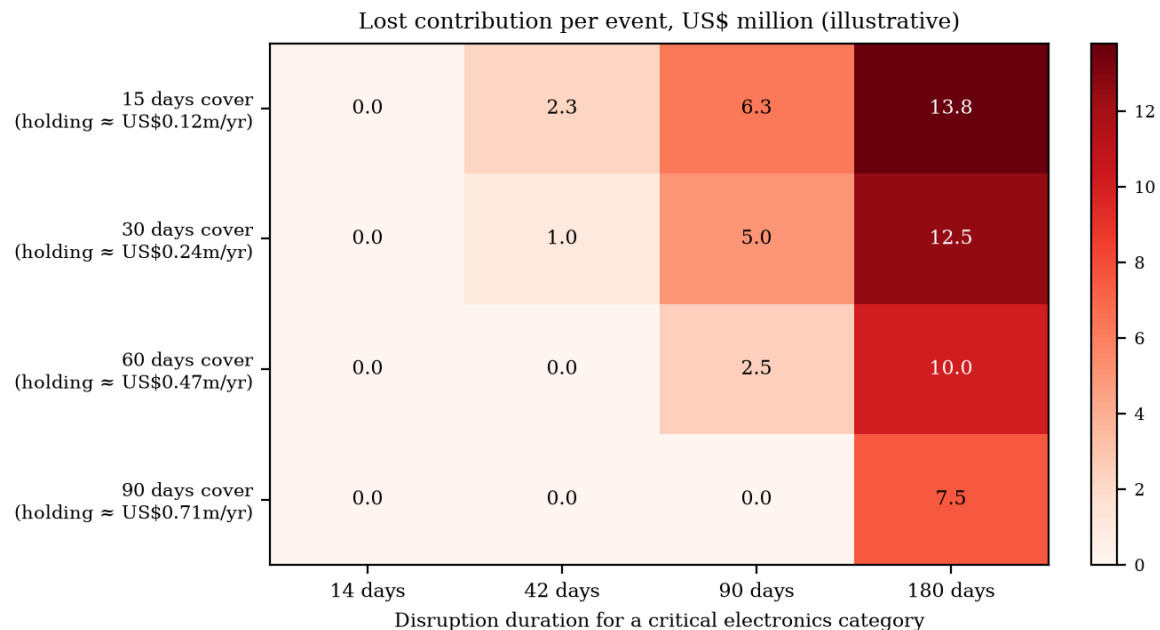
F4. Inventory Buffers and Resilience

A buffer protects contribution during a disruption at the cost of holding inventory. Equation 4 gives the annual holding cost of extra cover ΔB days for a component category of unit value v_k at annual volume Q and holding-cost rate h , and the break-even probability p^* at which the expected avoided loss ΔL equals that cost.

$$\Delta H = h \cdot v_k \cdot \frac{\Delta B}{365} \cdot Q, \quad p^* = \frac{\Delta H}{\Delta L} \quad (4)$$

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 10: Illustrative Resilience Scenarios: Lost Contribution by Buffer Cover and Disruption Length


Note: Teaching-case assumptions throughout: one critical electronics category valued at US\$120 per printer, 120,000 printers a year, 56-day replenishment lead time, 30% of lost sales recaptured later and a 20% annual holding-cost rate. Cells show contribution lost per disruption event, not expected annual loss. The reference point for real inventory is Prusa Manufacturing's inventory of about 113 days of material consumption at end-2024, which covers all materials, not one category.

(Source: Author's teaching model; inventory reference from [Prusa Manufacturing a.s.](#), 2025)

Exhibit 10 shows lost contribution per disruption for one critical electronics category (teaching-case assumptions). With 15 days of cover, a 90-day disruption costs about US\$6.3 million of contribution; with 30 days, about US\$5.0 million; with 60 days, US\$2.5 million. Raising cover from 15 to 30 days costs about US\$0.12 million a year in holding cost and avoids about US\$1.25 million per long disruption. The extra cover therefore pays for itself if such a disruption is expected more often than about once in ten and a half years ($p^* \approx 0.094$ a year). Against a 42-day disruption, raising cover from 15 to 90 days requires $p^* \approx 0.26$ a year, a much higher threshold, because stock beyond 42 days of cover is never drawn down in such an event. The useful managerial question is not "What is the probability of disruption?", which cannot be observed, but "Would the firm accept a disruption of this length more often than the break-even frequency?"

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

A conventional expected-loss figure can be computed as a stress test, using Equation 5, where p_i is an assumed annual probability of scenario i and L_i its loss.

$$E[L] = \sum_i p_i L_i \quad (5)$$

With an assumed 20 per cent annual probability of a 42-day disruption and 60 days of cover, the expected loss is zero, while a 180-day event at the same probability yields an expected loss of about US\$2.0 million a year (teaching-case assumptions). The figure depends entirely on the assumed probability, which is why the case relies on break-even frequencies instead. The real inventory reference, about 113 days of material consumption at Prusa Manufacturing at the end of 2024, is an aggregate across all materials; it cannot show whether any single category is thinly covered.

F5. Make, Buy or Dual Source

Transaction cost economics suggests that firms integrate when assets are specific, transactions are frequent and contracts cannot specify quality (Teece, 1986). Prusa's integration of circuit board assembly, moulding and filament fits that logic: these are items whose quality depends on processes the firm wants to control. Purchased chips and motors are less specific in design but can become specific in practice once a product is tuned to a supplier's tolerances. Exhibit 11 compares the three modes. The hybrid mode reduces disruption exposure only if the two sources are genuinely independent; a second supplier that buys from the same upstream factory adds qualification cost without adding resilience (Tomlin, 2006).

Exhibit 11: Vertical Integration, Contract Supply and Hybrid Modes Compared

Criterion	In-house (vertical integration)	Contract or catalogue supply	Hybrid (dual: in-house plus qualified external)
Asset specificity of the part	Fits high specificity (custom PCBs, printed parts)	Fits standard parts	Fits parts whose specificity is rising
Fixed cost and break-even	High fixed cost; needs volume	Variable cost; supplier carries capacity	Two fixed qualification costs
Speed of design change	Fast; same-site engineering	Depends on supplier priority	Fast for in-house share
Disruption exposure	Concentrated in own sites	Concentrated in supplier and its region	Lower if sources are truly independent
Qualification load	Once, internal	Per supplier and per process change	Highest: two sources to keep qualified
Prusa evidence	PCBs, moulding, filament, printed parts, assembly	Stepper motors; China-made parts (unspecified)	Delaware assembly with Prague parts (assembly, not sourcing)

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Note: Interpretation based on transaction cost economics and resilience literature; the 'Prusa evidence' row records documented facts only.

(Source: Author's analysis drawing on [Teece](#), 1986; [Sheffi & Rice](#), 2005; [Tomlin](#), 2006; [Průša](#), 2024; [Tom's Hardware](#), 2026)

F6. Tariffs and U.S. Localisation

The United States accounted for 35 per cent of revenue by mid-2026 ([Cnews.cz](#), 2026). U.S. tariff policy changed repeatedly between 2025 and 2026: tariffs imposed under emergency economic powers were struck down in February 2026, and the additional 12.5 per cent duty on Chinese-origin goods took effect in July 2026, according to secondary sources. No additional duty on EU-origin printers was identified at the cut-off, but this is a reading of a moving schedule rather than a verified absence. Rivals adjusted U.S. prices in response to earlier tariffs ([Bambu Lab](#), 2025c; [Tom's Hardware](#), 2025a). For Prusa, Delaware assembly reduces exposure to duties on finished printers. Because parts still come from Prague, a duty on components would affect the U.S. site as well.

U.S. localisation also changes the supply chain in less visible ways. Delaware assembly creates a second set of finished-goods and work-in-progress inventories, a second point at which quality must be controlled and a transatlantic flow of parts whose lead time is measured in weeks. The illustrative Delaware capacity step analysed in the Findings shows that additional U.S. capacity justified on cost alone needs more volume than U.S. sales are assumed to provide; its justification would have to rest partly on tariff protection, delivery speed or access to buyers who prefer domestic assembly. The company's statement that the Delaware benches and tools are identical to those in Prague ([Prusa Research](#), 2024a) is relevant here: identical processes reduce qualification effort for the second site, which is consistent with the qualification-bottleneck lens.

F7. An Integrated Risk View

Exhibit 12 combines the risks discussed above. Each risk is rated for impact and for the quality of the evidence that it applies to Prusa; no probabilities are assigned. Price compression and a single-category electronic component shortage rank highest on impact. The risk most directly connected to the qualification bottleneck, defects arising from supplier process changes, is documented by the company itself. The risk of community disengagement is inferred from the critique of the OCL and from the low slicer merge rate; it is not observed directly.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Exhibit 12: Risk Matrix: Impact and Evidence-Based Exposure

Risk	Impact (1–5)	Exposure evidence	Rating basis
Price compression from lower-priced enclosed rivals	5	Documented	Dated prices (Exhibit [[comp]]); CONTEXT top-four share of 88%
Single-category electronic component shortage	4	Inferred	Component stock at Prusa Circuits; general lead times
Supplier process change causing defects	3	Documented	Průša (2024): issues 'several times a month'
U.S. tariff change on EU-origin printers	4	Assumed	No additional duty identified at the cut-off; U.S. is 35% of revenue
Imitation of published designs by low-cost makers	3	Documented (claimed)	Průša (2025) essay; patent claims are his
Community disengagement after licence changes	2	Inferred	Critique of OCL; slicer merge rate
Delaware ramp dependent on Prague parts	3	Documented	Tom's Hardware (2026)

Note: Impact is the author's ordinal judgement of the effect on contribution if the risk materialises (5 = severe). Exposure is graded by the quality of evidence, not by an invented probability: Documented = stated in a dated primary or press source; Inferred = reasoned from filings; Assumed = a teaching assumption. Probabilities are deliberately not assigned.

(Source: Author's analysis drawing on [CONTEXT](#), 2026; [Průša](#), 2024; [Průša](#), 2025; [Cnews.cz](#), 2026; [Tom's Hardware](#), 2026; [Open Community Licence](#), 2025)

Findings

Five findings emerge from the evidence and the model. They are interpretations and should be tested in discussion.

First, Prusa's openness is selective and has become more so for electronics and manufacturing data, while code remains under copyleft licences and CAD has been released under a restrictive licence of the company's own design. The layers that remain closed (manufacturing data, supplier and test information) are those that most directly convert designs into dependable products.

Second, the group is substantially integrated in manufacturing but not in components. Audited filings show growing revenue and improved operating results across the five companies in

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

2024, a large inventory buffer at the manufacturing company and substantial purchases from outside the group. The company's own account confirms that some components are made in China. The related-party statement that the group develops and makes all components is best read as a description of the components it sells, not of every input it buys.

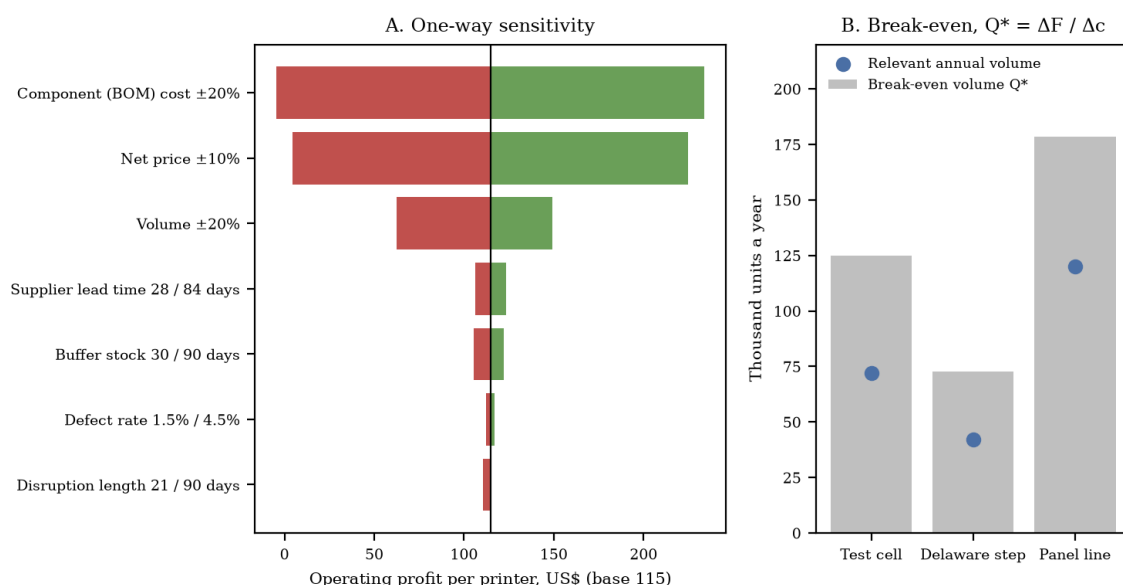
Third, community research and development provides more information than finished work. GitHub activity shows many contributors and many issues, but few direct merges in the slicer. The firm's validation capacity limits how much community input it can absorb.

Fourth, the unit economics are dominated by price and component cost, not by operational variables. Exhibit 13, Panel A, shows that a 10 per cent change in net price or a 20 per cent change in component cost moves illustrative operating profit per printer from about US\$115 to between roughly zero and US\$230 (teaching-case assumptions). Lead time, defect rate and buffer stock move it by less than US\$10 in either direction. Resilience investments are therefore affordable relative to the margin at risk from price pressure, but they cannot substitute for a sustainable price position.

Fifth, capacity investments need volume to pay off. Equation 6 gives the break-even volume Q^* for an investment that raises fixed cost by ΔF and improves contribution per unit by Δc .

$$Q^* = \frac{\Delta F}{\Delta c} \quad (6)$$

Exhibit 13: Illustrative Break-even and One-way Sensitivity Analysis



Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Note: Teaching-case assumptions throughout. Panel A varies one input at a time around a base operating profit of about US\$115 per printer (contribution of US\$363 less US\$25 million of fixed cost spread over 120,000 printers, holding cost and expected defect cost). Panel B compares Q^* with the volume each investment would serve: 72,000 assembled units for the test cell, 42,000 U.S. units (35% of volume) for a Delaware capacity step, and all units for an enclosure-panel line.

(Source: Author's teaching model)

In Exhibit 13, Panel B, each of the three illustrative investments has a break-even volume above the volume it would serve: a US\$1.5 million automated test cell needs 125,000 assembled units against an assumed 72,000; a US\$4 million Delaware capacity step needs about 72,700 U.S. units against an assumed 42,000; and a US\$2.5 million enclosure-panel line needs about 178,600 units against 120,000 (teaching-case assumptions). Under these assumptions none pays back on cost savings alone within a year; each must be justified partly by resilience, quality or market access, or by growth that the model does not assume.

Proposed Solutions and Recommendations

Seven options are available. They are not mutually exclusive, and the case does not identify a preferred option. Exhibit 14 scores them against six criteria under three weightings that reflect different leadership priorities.

Option A, premium differentiation, would hold prices and invest in reliability, service and the evidence that supports a premium, such as published uptime and repair data. It protects margin per unit and requires little capital, but leaves volume exposed to price competition in segments that value purchase price.

Option B, selective cost optimisation, would redesign or re-source specific components to lower cost while holding quality. It acts quickly on margin, but every change passes through the qualification bottleneck and may raise defect risk.

Option C, ecosystem investment, would deepen the slicer, profiles, Printables and materials ecosystem and engage the community more systematically, for example by funding validation of community contributions. It fits the firm's identity and may build loyalty, but its effect on margins and resilience is indirect and slow.

Option D, product segmentation, would separate offerings more sharply, for example a lower-priced line with fewer service commitments and a professional line with stronger guarantees. It addresses the TCO finding directly but risks cannibalisation and complicates manufacturing.

Option E, deeper manufacturing and service integration, would bring more component categories in-house and extend service capabilities in the United States. It strengthens control and resilience but demands capital and volume, as the break-even analysis shows.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Option F, supply-chain diversification, would qualify independent second sources for the most exposed categories and set buffer policies by category. It scores highest on resilience but carries the heaviest qualification load and adds cost without improving the product.

Option G, a hybrid, would sequence elements of B, F and C: targeted cost work on the categories with the largest savings, qualification of second sources for categories where exposure is documented or inferred, and community engagement focused on validation. It balances objectives, but it requires management attention across several fronts at once and may dilute each.

Exhibit 14: Decision Matrix for Options A–G Under Three Weightings

Option	C1	C2	C3	C4	C5	C6	Score: cost-first	Score: resilience- first	Score: ecosystem- first
A Premium differentiation	3	2	4	4	3	3	3.20	2.95	3.15
B Selective cost optimisation	4	2	2	3	3	4	3.15	2.75	2.95
C Ecosystem investment	3	1	3	3	5	2	2.65	2.35	3.20
D Product segmentation	3	2	2	3	3	3	2.70	2.50	2.70
E Manufacturing and service integration	3	4	2	1	3	2	2.45	2.75	2.60
F Supply-chain diversification	2	5	1	2	3	2	2.35	3.00	2.60
G Hybrid (sequenced B + F + C)	3	4	2	2	4	2	2.70	3.00	3.05

Note: Teaching-case assumptions: scores (1–5) and weights are the author's and are offered for students to challenge. Criteria: C1 margin protection; C2 supply resilience; C3 qualification load (5 = light); C4 capital and cash need (5 = light); C5 openness and community fit; C6 speed to effect. Weights for C1–C6 (per cent): cost-first 30/15/15/20/5/15; resilience-first 10/35/15/15/10/15; ecosystem-first 15/15/15/15/30/10. The leading option changes with the weighting (A; F and G tied; and C respectively), which is the purpose of the exhibit; it does not identify a recommended option.

(Source: Author's teaching model)

Under the cost-first weighting, Option A leads narrowly over B. Under the resilience-first weighting, Options F and G tie, with A close behind. Under the ecosystem-first weighting, C leads, followed by A and G. The leader changes with the weighting, which means that the choice depends on what Prusa's leadership values most and on the evidence that students regard as reliable. Several defensible combinations exist, and the discussion questions ask students to construct and defend one.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Implementation Plan

Any chosen strategy would have to be implemented within the constraints the case has identified. The following plan is a framework for discussion, not a recommendation; its phases can be filled with the elements of whichever options students choose.

In the first six months, the firm would map component categories to evidence of exposure, using internal data that this case cannot see: supplier counts, upstream dependencies, lead times and defect history. It would set break-even frequencies for buffers by category, rather than a single inventory policy, and define the metrics that would show whether a premium is being earned, such as warranty claims, downtime reported by professional users and repeat purchase rates.

From months seven to 15, the firm would act on the categories identified as most exposed: qualifying second sources, redesigning parts, or adding buffers, depending on the option mix. Qualification capacity is the binding constraint, so the sequence matters more than the list. Community work could be directed to tasks the firm can validate efficiently, such as printer profiles and test cases, rather than core code.

From months 16 to 24, the firm would review results against the metrics set at the start and decide whether to make larger capacity investments, such as additional U.S. capacity or in-house production of further components, whose break-even depends on volume growth.

Governance of the plan would matter as much as its content. Because the qualification bottleneck is shared across options, a single owner of qualification capacity, with authority to prioritise among cost projects, second-source projects and community validation, would prevent the options from competing for the same engineers and test rigs without visibility. The financial case for each step could be presented in the form used in this case: contribution effect, break-even volume, holding cost and break-even disruption frequency, so that leadership compares like with like. Where an investment is justified mainly by resilience, the break-even frequency would be stated explicitly, so that the judgement on whether the firm accepts that frequency is made openly rather than embedded in a forecast.

Communication with the community would also form part of implementation. Licensing changes in 2023 and 2025 drew public criticism ([Weinberg, 2023](#); [Open Community Licence, 2025](#)). Any further change, whether more openness for some layers or less for others, would be easier to sustain if the firm explained which layers it publishes and why, and which contributions it can validate. Such communication cannot be scripted from the outside, and the case does not suggest any wording.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

Throughout, three risks would require monitoring: a sudden change in U.S. tariffs on EU-origin goods, a sharp price move by a large rival and loss of goodwill in the community after licensing changes. The plan's success indicators would be margin per printer, defect and return rates, supply interruptions avoided and the rate at which community contributions are incorporated.

Conclusion

Prusa Research's history shows that an open-source hardware company can grow into a substantial manufacturer, but it also shows the limits of openness as a source of advantage. The evidence at the cut-off suggests that publishing designs helped build a brand, a community and an installed base, while making imitation cheaper for rivals. The assets that are hardest to copy are not the published files but the testing, validation and qualification capabilities that the firm keeps in-house. Those same capabilities constrain how quickly the firm can lower costs or diversify supply.

The case does not show that Prusa will or should follow any one path. The illustrative model indicates that price and component cost dominate profitability, that resilience investments are modest relative to the margin at risk, and that capacity investments depend on volume growth. The choice among premium differentiation, cost optimisation, ecosystem investment, segmentation, integration, diversification and combinations of these depends on how leadership weighs competing objectives and on internal evidence that is not public. The following questions are intended to guide that analysis.

1. Under the licensing mix in place at the cut-off (AGPL-3.0 slicer, GPL firmware, schematics without manufacturing data, CORE One CAD under the OCL), which elements of Prusa's system are cheap for a rival to copy and which are hard to copy? Support each judgement with evidence from the case.
2. Can Prusa's openness be a source of sustained competitive advantage? Assess the qualification-bottleneck lens proposed in the case and identify the evidence that would weaken it.
3. Does community-driven research and development reduce Prusa's development costs or redistribute them? Use the GitHub data in Exhibit 6 and explain the limits of those data.
4. Compare cost leadership, premium differentiation and ecosystem investment as strategies for Prusa. Evaluate each named rival on its own terms rather than as a group, and explain which buyer segments each strategy would serve.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

5. Which component categories appear most exposed to supply disruption? For each, distinguish what is supported by evidence from what rests on assumption, and identify the internal data that would resolve the difference.
 6. Explain why publishing a design does not make its components substitutable. How should this distinction affect Prusa's sourcing and qualification decisions?
 7. Using the model, determine under what disruption assumptions additional buffer stock or a qualified second source pays for itself. How sensitive is the answer to lead time, defect rate and disruption length?
 8. Propose a combined strategy for Prusa and a sequence for the next 24 months. State the assumptions on which it depends and the evidence that would lead you to change it.
-

References

- Anycubic. (2026). *Kobra S1 Combo* [Product page; Internet Archive capture of July 8, 2026]. <https://web.archive.org/web/20260708/https://store.anycubic.com/products/kobra-s1-combo>
- Bambu Lab. (2025a, January 16). *Firmware update introducing new authorization control system*. Bambu Lab Blog. <https://blog.bambulab.com/firmware-update-introducing-new-authorization-control-system-2/>
- Bambu Lab. (2025b, March 25). *Bambu Lab launches H2D to rethink personal manufacturing*. Bambu Lab Blog. <https://blog.bambulab.com/bambu-lab-launches-h2d-to-rethink-personal-manufacturing/>
- Bambu Lab. (2025c, May 15). *Price adjustment alert!* [Forum announcement]. Bambu Lab Community Forum. <https://forum.bambulab.com/t/price-adjustment-alert/169495>
- Bambu Lab. (2025d, October 14). *The icon redefined: Meet the P2S, a completely reengineered version of the ultra-productive P1 series*. Bambu Lab Blog. <https://blog.bambulab.com/the-icon-redefined-meet-the-p2s-a-completely-reengineered-version-of-the-ultra-productive-p1-series/>
- Bonvoisin, J., Mies, R., Boujut, J.-F., & Stark, R. (2017). What is the "source" of open source hardware? *Journal of Open Hardware*, 1(1), 5. <https://doi.org/10.5334/joh.7>
- Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business School Press. <https://hbsp.harvard.edu/product/8377-HBK-ENG>

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

- Cnews.cz. (2026, July 7). *Průša přebrandovává svoji firmu, chce více prorazit v zemi, kde má přes třetinu tržeb* [Průša rebrands its firm to break through in the country that brings over a third of its revenue]. <https://www.cnews.cz/clanky/prusa-prebrandovava-svoji-firmu-chce-vice-prorazit-v-zemi-kde-ma-pres-tretinu-trzeb/>
- CONTEXT. (2026, July 9). *Quarterly global industrial 3D printer shipments surge on the back of strong defence and 3C sector demand* [Press release]. <https://www.contextworld.com/quarterly-global-industrial-3d-printer-shipments-surge-on-the-back-of-strong-defence-and-3c-sector-demand>
- Creality. (2026a). *K2 Plus Combo* [Product page; Internet Archive capture of July 10, 2026]. <https://web.archive.org/web/20260710/https://store.creality.com/products/k2-plus-combo>
- E15. (2025, October 29). *Český výrobce 3D tiskáren roste i přes boj s Čínou* [Czech 3D printer maker grows despite the fight with China]. <https://www.e15.cz/byznys/cesky-vyrobce-3d-tiskaren-roste-i-pres-boj-s-cinou-prusa-loni-utrzil-skoro-ctyri-miliardy-1428391>
- Elegoo. (2026). *Centauri Carbon* [Product page; Internet Archive capture of July 31, 2026]. <https://web.archive.org/web/20260731/https://us.elegoo.com/products/centauri-carbon>
- Ellram, L. M. (1993). Total cost of ownership: Elements and implementation. *International Journal of Purchasing and Materials Management*, 29(4), 3–11. <https://doi.org/10.1111/j.1745-493X.1993.tb00013.x>
- Henkel, J. (2006). Selective revealing in open innovation processes: The case of embedded Linux. *Research Policy*, 35(7), 953–969. <https://doi.org/10.1016/j.respol.2006.04.010>
- Hu, B. (2021). *Original Prusa i3: The self-replicating 3D printer* [Case study]. The Case Centre. <https://www.thecasecentre.org/products/view?id=183727>
- Open Community Licence. (2025, December 19). *Is the OCL an open source licence? (Issue No. 13)* [Discussion thread]. GitHub. <https://github.com/OpenCommunityLicence/OpenCommunityLicence/issues/13>
- Pearce, J. M. (2017). Emerging business models for open source hardware. *Journal of Open Hardware*, 1(1), 2. <https://doi.org/10.5334/joh.4>
- Prusa Circuits a.s. (2025). *Účetní závěrka a výroční zpráva za rok 2024 [Financial statements and annual report for 2024] (filed October 15, 2025)*. Public Register, Ministry of Justice of the Czech Republic. <https://or.justice.cz/ias/ui/vypis-sl-firma?subjektId=1144992>
- Prusa Development a.s. (2025). *Účetní závěrka a výroční zpráva za rok 2024 [Financial statements and annual report for 2024] (filed October 15, 2025)*. Public Register, Ministry of Justice of the Czech Republic. <https://or.justice.cz/ias/ui/vypis-sl-firma?subjektId=996975>

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

- Prusa Manufacturing a.s. (2025). *Účetní závěrka a výroční zpráva za rok 2024 [Financial statements and annual report for 2024]* (filed October 15, 2025). Public Register, Ministry of Justice of the Czech Republic. <https://or.justice.cz/ias/ui/vypis-sl-firma?subjektId=996632>
- Prusa Polymers a.s. (2025). *Účetní závěrka a výroční zpráva za rok 2024 [Financial statements and annual report for 2024]* (filed October 15, 2025). Public Register, Ministry of Justice of the Czech Republic. <https://or.justice.cz/ias/ui/vypis-sl-firma?subjektId=993945>
- Prusa Research a.s. (2025). *Účetní závěrka, výroční zpráva, zpráva o vztazích a zpráva auditora za rok 2024 [Financial statements, annual report, related-party report and auditor's report for 2024]* (Doc. B 23056/SL25/MSPH; filed October 15, 2025). Public Register, Ministry of Justice of the Czech Republic. <https://or.justice.cz/ias/ui/vypis-sl-detail?dokument=88534310&subjektId=996294&spis=1102707>
- Prusa Research. (2024a, July 4). *We are now manufacturing 3D printers and filaments in the USA! Prusa Research Blog.* https://blog.prusa3d.com/we-are-now-manufacturing-3d-printers-and-filaments-in-the-usa_99148/
- Prusa Research. (2024b, November 19). *Introducing Prusa CORE One: Fully enclosed CoreXY 3D printer with active temperature control.* Prusa Research Blog. https://blog.prusa3d.com/introducing-prusa-core-one-fully-enclosed-corexy-3d-printer-with-active-temperature-control_105477/
- Prusa Research. (2025a, February 12). *Velké ohlédnutí za rokem 2024 v Prusa Research [A big look back at 2024 at Prusa Research]*. Prusa Research Blog. https://blog.prusa3d.com/cs/velke-ohljedniti-za-rokem-2024-v-prusa-research_110103/
- Prusa Research. (2025b, October 31). *Think big, print bigger: Introducing the Prusa CORE One L! Prusa Research Blog.* https://blog.prusa3d.com/think-big-print-big-introducing-the-prusa-core-one-l_124294/
- Prusa Research. (2025c, December 19). *Open-sourcing CORE One CAD files under the new Open Community License (OCL).* Prusa Research Blog. https://blog.prusa3d.com/core-one-cad-files-release-under-the-new-open-community-license-ocl_127290/
- Prusa Research. (2026a, June 29). *Flash summer deal 2026: 20% off MK4S, reduced CORE One shipping.* Prusa Research Blog. https://blog.prusa3d.com/flash-summer-deal-2026-20-off-mk4s-reduced-core-one-shipping_137330/
- Prusa Research. (2026b, August 13). *Better prints, easier use: Prusa XL+, CORE One L+ and CORE One+ (Gen 2), our big product update.* Prusa Research Blog.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

https://blog.prusa3d.com/better-prints-easier-use-prusa-xl-core-one-l-and-core-one-gen-2-our-big-product-update_137539/

Prusa Research. (2026c). *Open-source at Prusa Research* [Web page; Internet Archive capture of July 29, 2026].

https://web.archive.org/web/20260729/https://www.prusa3d.com/page/open-source-at-prusa-research_236812/

Prusa Research. (2026d). *Prusa CORE One+* [Product page; Internet Archive capture of August 14, 2026].

<https://web.archive.org/web/20260814/https://www.prusa3d.com/product/prusa-core-one/>

Prusa Research. (2026e). *Original Prusa MK4S* [Category page; Internet Archive capture of August 8, 2026].

<https://web.archive.org/web/20260808/https://www.prusa3d.com/category/original-prusa-mk4s/>

Prusa Research. (2026f). *PrusaSlicer* [Source code repository; AGPL-3.0; pull-request and issue history to August 15, 2026]. GitHub. <https://github.com/prusa3d/PrusaSlicer>

Prusa Research. (2026g). *Prusa-Firmware-Buddy* [Source code repository; pull-request and issue history to August 15, 2026]. GitHub. <https://github.com/prusa3d/Prusa-Firmware-Buddy>

Průša, J. (2023, March 29). *The state of open-source in 3D printing in 2023*. Prusa Research Blog. https://blog.prusa3d.com/the-state-of-open-source-in-3d-printing-in-2023_76659/

Průša, J. (2024, January 31). *What it takes to manufacture 3D printers in Europe*. Prusa Research Blog. https://blog.prusa3d.com/what-it-takes-to-manufacture-3d-printers-in-europe_91532/

Průša, J. (2025, August). *Open hardware desktop 3D printing is dead – you just don't know it yet*. JosefPrusa.com. <https://www.josefprusa.com/articles/open-hardware-in-3d-printing-is-dead/>

Sheffi, Y., & Rice, J. B., Jr. (2005). A supply chain view of the resilient enterprise. *MIT Sloan Management Review*, 47(1), 41–48. <https://sloanreview.mit.edu/article/a-supply-chain-view-of-the-resilient-enterprise/>

Shenzhen Creality 3D Technology Co., Ltd. (2026b, May 20). *Global offering* [Prospectus]. Hong Kong Exchanges and Clearing. <https://www1.hkexnews.hk/listedco/listconews/sehk/2026/0520/2026052000023.pdf>

Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6), 285–305. [https://doi.org/10.1016/0048-7333\(86\)90027-2](https://doi.org/10.1016/0048-7333(86)90027-2)

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.

- The Verge. (2025, January 24). *OrcaSlicer rejects Bambu Connect*.
<https://www.theverge.com/2025/1/24/24351419/orca-slicer-rejects-bambu-connect-we-encourage-bambulab-to-reconsider-their-current-policy>
- Tom's Hardware. (2025a, April 21). *3D printing is about to get more expensive, if you can get it at all*. <https://www.tomshardware.com/3d-printing/3d-printing-is-about-to-get-more-expensive-if-you-can-get-it-at-all>
- Tom's Hardware. (2025b, August 17). *Prusa CEO declares that open hardware desktop 3D printing is dead*. <https://www.tomshardware.com/3d-printing/prusa-ceo-declares-that-open-hardware-desktop-3d-printing-is-dead-cites-rise-of-chinas-government-subsidies-countrys-permissive-patent-system>
- Tom's Hardware. (2026, July 25). *Delaware's Printed Solid rebrands to Prusa USA*.
<https://www.tomshardware.com/3d-printing/delawares-printed-solid-rebrands-to-prusa-usa>
- Tomlin, B. (2006). On the value of mitigation and contingency strategies for managing supply chain disruption risks. *Management Science*, 52(5), 639–657.
<https://doi.org/10.1287/mnsc.1060.0515>
- United States International Trade Commission. (2026). *Harmonized Tariff Schedule of the United States (2026 Revision)*, heading 8485.20.00 and subheading 9903.05.31 [Database]. <https://hts.usitc.gov/search?query=8485.20.00>
- Weinberg, M. (2023, April 5). *A(nother) reply to Josef Průša*. MichaelWeinberg.org.
<https://michaelweinberg.org/blog/2023/04/05/prusa-response/>
- West, J., & Kuk, G. (2016). The complementarity of openness: How MakerBot leveraged Thingiverse in 3D printing. *Technological Forecasting and Social Change*, 102, 169–181. <https://doi.org/10.1016/j.techfore.2015.07.025>
-

Disclaimer: This case study has been independently researched and written without external influence or bias. The content presented is based solely on objective analysis, facts, and available data. No conflict of interest exists between the author(s) and the subject or company featured in this case study. Furthermore, this study has not been commissioned, sponsored, or compensated by the subject, the company, or any related party. All views and conclusions expressed in this case study are those of the author(s) and are not influenced by external stakeholders. The purpose of this case study is to provide informative and unbiased insights for educational and research purposes.

Open Access Cases (OAC)

Open Access Cases (OAC) follows the principles of Diamond Open Access, offering free access to high-quality case studies without any Article Processing Charges (APC). There are no embargo periods or paywalls, ensuring that all content is readily accessible to all readers. All case studies published in OAC are licensed under the **Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License**, allowing users to share and adapt the material with proper attribution, for non-commercial purposes, and without modifying the content.