13 / COLLABORATION

IBM

Linux on the mainframe

Should a company support an open technology that could erode part of its existing business?



IBM System/360 museum display, 2008. Historical mainframe context. Photograph: Erik Pitti.
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A local Linux initiative becomes a strategic choice about collaboration, customer value and the profit that may move between products.

William Zeitler, Lou Gerstner and the strategy team | 1999 • reconstructed strategy decision

35-45 minutes to prepare / 75 minutes to discuss
Original public-source teaching case • First member edition • 1 November 2026

PRINCIPLED BUSINESS IN PRACTICE

Introduction

About Principled Business

Principled Business (PB) is a nonprofit organization that brings together business leaders to advance capitalism through education, relationships and action. It helps founders, executives and investors understand free enterprise, apply its principles in their organizations, and explain the contribution business makes to people's lives.

The PB manifesto grounds capitalism in individual agency, private ownership and voluntary production and trade. These commitments take practical form in everyday business decisions.

Collaboration

PB treats voluntary collaboration and mutually beneficial exchange as central to capitalism. Cooperation becomes practical when responsibilities, rewards and decision rights are clear.

IBM's Linux decision examines collaboration with people and institutions the company does not control. An open technology may weaken one revenue stream while strengthening complementary services and customer relationships. Students must evaluate the whole exchange and define how the company contributes responsibly to the shared technology.

PB presents this case to make the principle usable in a real business decision. Your recommendation should connect the principle to a workable policy, account for the people affected, and identify evidence that could change your mind.

What you will learn

01 Evaluate cannibalization against a realistic competitive alternative.

02 Calculate the contribution of new customers and retained relationships.

03 Design commercial and community commitments for an open collaboration.

> **Apply it to your own business**
> What outside technology or shared resource could help your customers while threatening an existing revenue stream? What would happen if you declined to participate?

Source: About Principled Business; Capitalists for Capitalism Manifesto, Section 2: Collaboration.

NOTES FOR STUDENTS AND TEACHERS

Using this case study

This packet includes the case, exhibits, worksheet, sources, answers and teaching notes. Allow 35-45 minutes to prepare and 75 minutes for discussion. Have a calculator or spreadsheet available.

Pages	What to use and when
4-8	Decision, evidence, exercise and alternatives. Read before discussion.
9	Decision worksheet. Complete before reading the answers.
10	Sources and reading notes. Check the evidence and its limits.
11-12	Worked answers, outcome and teaching plan. Read after deciding.

For students

Read once to identify the decision, then work through the exhibits. Separate historical facts from the invented classroom exercise. Use the case's decision boundary; write down assumptions when evidence is missing. Complete the calculation and worksheet on page 9. Be ready to defend your recommendation and the strongest objection to it.

For individual study, decide before turning to pages 11-12. Compare your reasoning with the worked analysis and write a short reflection on what you would change. Choose one action to try in your own organization.

For teachers and discussion leaders

Read the full packet and timed plan before teaching. Assign pages 1-10 first and reveal the final two pages after students commit to a choice. Record the alternatives, evidence and disagreements on the board.

Ask students to compare the proposal with a credible counterfactual, not an assumption that the existing profit pool will remain unchanged. Keep customer value and community contribution visible beside company economics.

> **How to assess the work**
> Look for a clear choice, accurate analysis, stated assumptions, attention to affected people, a fair objection, and an implementation plan with an owner and review point. Assess reasoning rather than agreement with the historical decision.

1999 • A LOCAL INITIATIVE REACHES STRATEGY

The decision

IBM’s early Linux work did not initially include the mainframe. According to Dan Frye’s later account, programmers in Böblingen began porting Linux to that platform, with local management support. The initiative became part of a strategic discussion involving Enterprise Systems leader William Zeitler and CEO Lou Gerstner. [I1]

Take the strategy team’s position before a commercial commitment. Supporting Linux could make the mainframe useful for a wider set of workloads. It could also change demand for proprietary software and the way IBM earned money from existing customers. The company would be collaborating with a broader community whose work it could influence but not simply direct.

Choose the scope of support

Decide whether to commercialize Linux on the mainframe, continue a bounded technical experiment or defend the existing proprietary offer. Explain the customer problem, the commercial logic and the commitments needed to work effectively with outside contributors.

This case does not reproduce a private meeting. It uses the published history to pose a decision about complementary value, competition and cooperation. The eventual product launch appears at the back.

> **Decision boundary**
> Do not assume that declining Linux preserves every existing sale. Do not assume that supporting it automatically creates profitable new demand. Both claims need evidence.

THE BUSINESS LOGIC

Where does the value move?

The product boundary may be too narrow

A technology can reduce revenue in one category while increasing demand for hardware, integration, support or other services. Evaluating only the threatened line may reject a strategy that strengthens the customer relationship. Evaluating only the new line may hide a real loss elsewhere.

The alternative is competitive

Customers can move even if the company refuses to change. A credible comparison asks what those customers would do without the proposed offer. Some may stay with the incumbent product; others may move to an outside platform. The counterfactual should be supported by customer evidence, not chosen to favor the proposal.

Collaboration requires contribution

Working with an open community involves shared technical practices, review and respect for applicable terms. A company cannot assume its priorities will automatically become the community's priorities. It needs people who can contribute useful work, listen to maintainers and distinguish common improvements from product-specific obligations.

Enterprise customers also need clear accountability. If the offer combines community software and commercial support, the company must state what it supports, how problems are escalated and what continuity customers can expect. Openness does not remove the need for a reliable service promise.

> **A strategic question**
> Which part of the relationship creates value customers will keep choosing, and which part of the current revenue model may be temporary?

EXHIBIT 1 • HISTORICAL CONTEXT

From port to supported offer

Historical evidence	Management implication
A local mainframe Linux port developed in Böblingen. [I1]	Useful knowledge can originate outside the original corporate plan.
The proposal entered a 1999 strategic debate. [I1]	A technical achievement still needs a commercial decision.
IBM’s 1999 chronology includes interoperability work. [I3]	Technical and ecosystem readiness require observable progress.

What a pilot must establish

Specify customer workloads, performance requirements, support demand and the work needed to maintain compatibility. Include evidence of willingness to pay for the complete offer. A successful demonstration can establish feasibility without proving that the business can support customers economically.

What a partnership must establish

Identify the shared project, contribution process and people responsible for the relationship. Explain what the company will contribute and what it expects to gain. Treat community acceptance as an outcome of useful participation, not a procurement deliverable the company can command.

> **Historical boundary**
> Later product records corroborate the direction taken. They do not supply the customer migration rates or contribution assumptions used in the next exhibit.

EXHIBIT 2 • INVENTED CLASSROOM EXERCISE

Cannibalization and complements

Use hypothetical annual contribution in U.S. dollars. There are 100 existing customer accounts, each contributing $1m under the current offer. Supporting Linux requires a one-year investment of $6m. Twenty existing accounts migrate, reducing each account's contribution by $0.4m while retaining the relationship.

Additional assumption	Amount
New Linux-related customer accounts	40
Contribution per new account	$0.3m
Base counterfactual	All 100 existing accounts stay without the new offer.
Alternative counterfactual	10 of the 20 migrating accounts would otherwise leave entirely.

Assume contribution includes relevant variable hardware, software and service costs. Ignore tax, discounting and future years. The 10 at-risk accounts are a subset of the 20 migrating accounts; do not count them twice.

01 Calculate contribution with Linux after the investment. Compare it with the base counterfactual.

02 Repeat the comparison when 10 accounts would otherwise leave.

03 How many new accounts are needed to break even against each counterfactual?

04 What customer evidence would help choose between the two counterfactuals?

> **A necessary discipline**
> Do not use the most favorable retention assumption merely because it makes the proposal profitable. State the evidence and show sensitivity.

ALTERNATIVES • IMPLEMENTATION • ASSIGNMENT

Make collaboration commercial

Path	Reason to choose it	Main concern
Commercial support	Offer customer value through a new combination of technologies and services.	Migration and support costs may exceed new contribution.
Bounded pilot	Learn about workloads, support and demand before scaling.	Delay may lose customers or momentum.
Protect the existing offer	Concentrate on a proven revenue model.	Customers may move to an alternative the company does not supply.

Your assignment

01 Recommend a scope and state a realistic customer counterfactual.

02 Identify the commercial services that customers would value enough to pay for.

03 Specify contributions and responsibilities toward the open community.

04 Define technical and commercial gates for expanding support.

Name the person accountable for the customer promise and the person accountable for community participation. Explain how disagreements between a delivery deadline and shared technical review will be resolved.

> **A proposal to test**
> “We will lose some software revenue but make it up elsewhere.” Replace that claim with named customers, measurable contribution and an explicit operating commitment.

WORKSHEET • COMPLETE BEFORE READING THE TEACHING NOTES

Your decision

Write as the decision-maker. Use the historical evidence and the classroom model for their stated purposes. A recommendation needs a boundary, an owner and a test.

My recommendation and the principle it puts into practice

The calculation or evidence that matters most; its main limitation

Who bears the risk, and how their choice or voice is protected

The strongest objection and my response

First action, accountable owner, review date and stop/change trigger

EVIDENCE • METHOD • LIMITS

Sources and reading notes

A reconstructed 1999 strategy decision based on a participant's retrospective account and IBM's historical product records. The migration and contribution model is invented, not IBM's actual business case.

I1 Dan Frye, Thirteen Months That Changed IBM, 2020

Participant account of the Linux initiative, Böblingen port and 1999 mainframe debate.

Open source document →

I2 IBM, VM/ESA Version 2 Release 4 resources

Historical chronology lists Linux software and services for S/390 in May 2000.

Open source document →

I3 IBM, VM news and site changes in 1999

Contemporaneous product-site chronology, including S/390 and Linux interoperability.

Open source document →

How to read the evidence

Frye's account was written later by a participant and should be read with that perspective. Product chronology corroborates commercialization but does not establish the project's profit contribution. The case does not provide software-license advice.

All quantities in the classroom exercise are invented unless explicitly identified as historical. The models omit factors deliberately for discussion; they are not company forecasts. Photographs are documentary context, with dates and licenses on the cover.

Original Principled Business teaching material. No company approval or affiliation with Harvard Business School is implied. No private interviews or unpublished company records were used. Public sources checked 1 November 2026.

TEACHING NOTES • READ AFTER COMPLETING THE DECISION

Worked analysis

The whole relationship

With Linux, contribution is $100m − (20 × $0.4m) + (40 × $0.3m) − $6m = $98m. Against an unchanged $100m baseline, the proposal is $2m worse in the modeled year.

Counterfactual without Linux	Contribution without Linux	Difference with Linux
All existing accounts stay	$100m	−$2m
10 accounts leave	$90m	+$8m

Break-even new customers

Against the base, new contribution must cover $8m of migration loss plus $6m investment. At $0.3m per account, 14 ÷ 0.3 = 46.67, so 47 whole new accounts are required. If 10 existing accounts would otherwise leave, the required new contribution is $4m, requiring 14 whole accounts.

Why the counterfactual matters

The Linux offer’s $98m result does not change between the two comparisons; the alternative does. Evidence about customer plans can therefore matter more than refining a small cost estimate. Interview customers, examine competing offers and test willingness to pay for the supported solution.

> **Collaboration needs substance**
> A commercial case should include the cost and capability to contribute, support and maintain the offer. Treating community work as a free input understates the relationship required to make it useful.

TEACHING NOTES • READ AFTER COMPLETING THE DECISION

Outcome and teaching plan

What happened next

Frye’s account describes approval in 1999, and IBM’s product chronology records Linux software and services for S/390 in May 2000. The local initiative became a supported commercial direction. These sources establish the sequence, not the fictional model’s revenue or retention results. [I1-I2]

A 75-minute discussion

Minutes	Facilitation plan
0-10	Choose commercial support, pilot or protection of the existing offer.
10-25	Map value across software, hardware, services and customers.
25-40	Calculate both counterfactuals and break-even account counts.
40-55	Design the customer promise and community contribution plan.
55-65	Reveal the launch and revisit the assumptions behind the choice.
65-75	Identify a collaboration that threatens one revenue line but may strengthen the whole business.

> **Closing question**
> When an outside technology changes where profit is earned, how will you distinguish protecting value from protecting an old way of charging for it?

Assess the decision at its stated boundary. Later success cannot prove the original choice was sound; later failure cannot, by itself, prove it was unreasonable.