World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

FROM CAPABILITY BUILDING TO COST RETRENCHMENT: RESOURCE ORCHESTRATION AND FINANCIAL PERFORMANCE IN A SIMULATED ROAD-BIKE VENTURE

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World Journal of Advanced Research and Reviews, 2026, 32(02), 540–548

Publication history: Received on 28 September 2026; revised on 07 November 2026; accepted on 09 November 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.32.2.2853

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ABSTRACT

Purpose: This paper examines how the sequencing of resource investment and later cost retrenchment shaped the financial performance of a small manufacturing venture. It asks whether resources that build capability and resources that are cut to protect price leadership leave distinct traces in the accounts.

Design/methodology/approach: A longitudinal single-case study of *Smart Bike*, a road-bike venture operated by a five-person management team in the SimVenture Evolution business simulation. Eight quarters of decision logs and financial statements (Year 4 Q1 to Year 5 Q4) were analysed using ratio analysis and pattern matching against the resource-based view, resource orchestration theory and the pecking order theory of finance.

Findings: Annual sales rose 42.3% (£1.05m to £1.49m) and annual net profit rose 219% (£100,281 to £319,869) after the venture invested in training, equipment and a social-media-led promotion mix. Gross margin held between 66.8% and 69.2% throughout. Gearing fell from 0.26 to 0.05 and the debtor collection period from about 40 to 8 days. However, the final quarter shows sales falling 20.2% and net profit 62.5% after cost-driven cuts to staff, salaries and equipment, while research and development stayed at 0.23% of sales.

Originality/value: The case shows, with quarter-level evidence, that a strong balance sheet can hide the early erosion of capability. It proposes a three-phase *build–leverage–retrench* pattern and offers practical guidance for small manufacturers and for educators who use simulations.

Keywords: Resource Orchestration; Resource-Based View; Retrenchment; SME Financial Performance; Business Simulation; Bicycle Industry

1 INTRODUCTION

Small manufacturers face a recurring dilemma once early growth arrives: keep investing in the people, equipment and know-how that produced the growth, or cut costs to defend a low price. The resource-based view (RBV) holds that durable advantage comes from resources that are valuable, rare, inimitable and non-substitutable (Barney, 1991; Wernerfelt, 1984). Yet owning such resources is not enough. Resource orchestration theory argues that value depends

on how managers structure, bundle and leverage resources over time (Sirmon, Hitt and Ireland, 2007; Sirmon et al., 2011).

Much less is known about what happens when managers reverse course and strip resources out. The turnaround literature treats retrenchment as a response to decline (Pearce and Robbins, 1993). It rarely examines retrenchment chosen by a *healthy* firm to protect price leadership. In such cases the balance sheet may look strongest just as capability starts to erode.

This paper addresses that gap through the case of *Smart Bike*, a road-bike venture run in the SimVenture Evolution simulation. The venture targeted the Road Commuting sub-segment of a market of about 30,000 buyers a year, competing on speed and price. Simulations compress years of decisions into weeks and record every decision and its financial result. This makes them useful settings for observing cause and effect that field studies seldom capture (Faria et al., 2009).

1.1 The study asks three questions:

- **RQ1** – How did investment in human, physical and marketing resources relate to sales and profit growth?
- **RQ2** – How did financing and working-capital choices support or constrain that growth?
- **RQ3** – What happened to performance when the venture moved from capability building to cost retrenchment?

The paper makes two contributions. First, it gives quarter-level evidence of a *build–leverage–retrench* sequence and shows how each phase appears in the accounts. Second, it shows that conventional health indicators (liquidity, gearing, equity growth) improved even as operating performance began to fall, which has practical value for owner-managers and for educators. Section 2 reviews the literature; Section 3 sets out the method; Section 4 reports the findings; Section 5 discusses them; and Section 6 concludes with recommendations.

2 LITERATURE REVIEW

2.1 Resources and capabilities

The RBV traces performance differences to firm-specific resources rather than industry position (Penrose, 1959; Wernerfelt, 1984). Barney (1991) argued that only resources meeting the VRIN tests sustain advantage, and Peteraf (1993) added that such resources must be heterogeneous and hard to move between firms. Grant (1991) distinguished resources from capabilities: equipment and cash are inputs, while the skill to combine them is what competitors struggle to copy.

Human capital theory explains why training budgets matter. Investment in skills raises productivity and is partly firm-specific, so it is hard for rivals to acquire (Becker, 2009). Capabilities also decay when they are not used or funded. Dynamic capabilities theory therefore stresses the ongoing renewal of the resource base as markets change (Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000).

2.2 Resource orchestration

Sirmon, Hitt and Ireland (2007) opened the "black box" between resources and results. They described three managerial actions: *structuring* the portfolio (acquiring, accumulating and divesting), *bundling* resources into capabilities, and *leveraging* those capabilities in the market. Later work showed that the right mix shifts across a firm's life cycle (Sirmon et al., 2011). Divesting is therefore part of orchestration, but timing and target matter: cutting a resource that underpins a capability can remove the capability itself.

2.3 Retrenchment

Retrenchment means reducing costs and assets, usually to restore profit in a declining firm (Pearce and Robbins, 1993). Schmitt and Raisch (2013) showed that retrenchment and recovery can work together, but only when cuts protect the activities that create future value. Most of this research studies firms already in decline. Retrenchment used by a profitable firm to keep prices low is less studied.

2.4 Market-facing resources

Brand equity and pricing power are also resources. Value-based pricing sets price from what customers believe a product is worth, not from cost (Hinterhuber, 2008; Nagle and Müller, 2017). Digital and social media now shape awareness and engagement, especially among younger buyers (Stephen, 2016). Product quality supports both brand and price; Juran (1986) framed quality management as a trilogy of planning, control and improvement. Steady R&D spending builds the absorptive capacity needed to take in new technology (Cohen and Levinthal, 1990).

2.5 Financing and working capital

The pecking order theory predicts that firms fund growth first from retained profit, then from debt, and issue equity last, because outside investors know less than managers (Myers and Majluf, 1984). Empirical tests find broad support among firms with limited access to equity markets (Frank and Goyal, 2003). Working-capital management matters as well: Baños-Caballero, García-Teruel and Martínez-Solano (2014) found an inverted-U link between working capital and performance, and credit policy shapes late payment and cash flow (Pike and Cheng, 2001).

2.6 Conceptual framework

Combining these strands gives the framework in Figure 1. Resources are first *built*, then *leveraged* through pricing, channels and financing, and may later be *retrenched*. Three propositions follow:

- **P1:** Investment in human, physical and marketing resources is followed by growth in sales and profit.
- **P2:** A profitable venture will follow the pecking order, repaying debt from retained profit.
- **P3:** Cutting resources that support core capabilities lowers operating performance even when balance-sheet indicators stay strong.

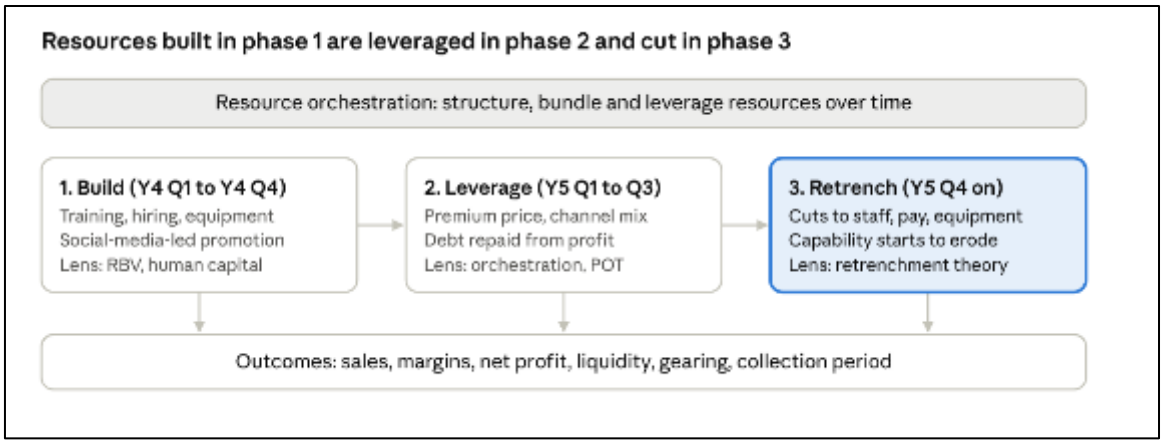


Figure 1: Conceptual framework · three phases, authors' construction

The orchestration band spans all three phases; the shaded box marks the retrenchment phase this paper focuses on.

3 METHODOLOGY

3.1 Research design

The study uses a longitudinal, single-case design. A single case suits "how" and "why" questions about a process that unfolds over time and cannot be separated from its context (Yin, 2018). The case was chosen because it shows a clear reversal in strategy within one observation window, which makes it a revealing case for theory building (Eisenhardt, 1989).

3.2 Research setting

Smart Bike was operated in SimVenture Evolution, a business simulation in which a team makes quarterly decisions on marketing, R&D, operations, organisation and finance. The simulated market holds about 30,000 road-bike buyers a year across five sub-segments, each valuing speed, off-road ability, comfort, weight and practicality differently. Smart Bike sold one model, *StreetSmart*, positioned on speed for the Road Commuting sub-segment. Its R&D dashboard showed speed at level 3 (+60% effect), comfort and practicality at level 2, and off-road and weight at level 1. Business games of this kind reproduce the trade-offs and feedback loops of real firms in a controlled setting (Faria et al., 2009).

3.3 Data

Three data sets were collected (Table 1). The authors were the venture's management team, so decision rationales are first-hand.

Table 1: Data sources.

Data set	Content	Period
Decision log	Workforce, training, salaries, equipment, promotion, pricing, channels, credit terms, borrowing	Y4 Q1 to Y5 Q4
Financial statements	Quarterly profit and loss, balance sheet, cash flow	Y4 Q1 to Y5 Q4
Dashboards	Demographics, sales channels, R&D levels, operations, sustainability scores	Snapshots, 2024

The profit and loss account is used for performance because the cash-flow "Sales" line records cash received, which lags invoiced sales. Dashboard figures reported for Year 6 were not reconciled to audited statements and are used only for context.

3.4 Analysis

Analysis followed three steps. First, decisions were ordered in time and grouped into phases. Second, standard ratios were calculated for each quarter: gross and net margin, current ratio, gearing (loans ÷ shareholder equity) and debtor days (debtors ÷ quarterly sales × 91). Third, the pattern of results was matched against the propositions in Section 2.6 (Yin, 2018).

Limitations

A simulation simplifies real markets: demand rules are fixed by the software and rivals are partly scripted. A single case cannot support statistical generalisation, only analytical generalisation to theory. The retrenchment phase falls mostly after the audited window, so its effects are seen in one audited quarter only. Because the authors made the decisions, hindsight bias is possible; it was limited by relying on recorded data rather than recollection.

4 FINDINGS

4.1 Decision chronology

The decision log falls into three phases (Table 2). In the build phase the team added people, skills, equipment and a new promotion mix. In the leverage phase it raised price and widened channels while repaying debt. In the retrench phase it cut staff, pay and equipment to keep the bike the cheapest in its segment.

Table 2: Decision chronology by phase

Phase	Area	Key decisions
Build (Y4 Q1–Q4)	People	Employees 10 to 12; training budget £20,000 to £50,000; policy moved from "maintain skills" to "rapid improvement", on the job
	Equipment	Production units 13 to 15 with standard automation; fixed assets rose from £60,762 to £237,527 in Y4 Q4
	Promotion	TV and radio cut; exhibitions 0 to 2; social media 0 to 7 at large scale, matched to a customer base led by young single workers (26.7%) and teenage families (23.1%)
	Finance	£50,000 loan in Y4 Q3; no new equity
Leverage (Y5 Q1–Q3)	Price	Base price £655 to £670 to £675; consumer discount 0–1%
	Channels	Trade discounts of 30% (large retail) and 20% (export); export sales visits raised to 3 in Y5 Q3; web retail grown
	Credit	Gentle credit control with invoice financing on retail and export channels
	Workforce	Contractors 0.3 to 0.9 FTE to absorb peaks
Retrench (Y5 Q4 onward)	Cost	Employees 12 to 10, salary cuts, equipment 15 to 14 units, aimed at lowest price in segment

All phases	R&D	£600 to £800 a quarter (£5,800 over eight quarters)

4.2 Growth and profitability

Sales and profit rose through the build and leverage phases, then dropped sharply in the first retrenchment quarter (Figure 2).

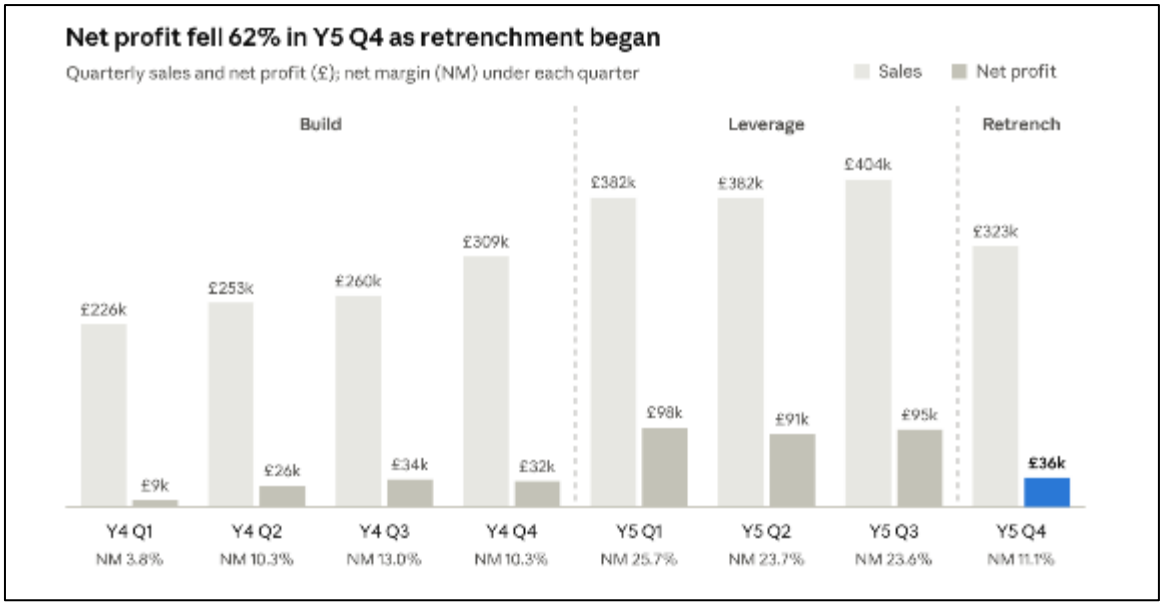


Figure 2: Quarterly sales and net profit by phase · source: Smart Bike profit and loss account, Y4 Q1 to Y5 Q4

The build phase included a deliberate dip. In Y4 Q4 operations cash outflow rose by £240,400 above its usual level as new equipment was bought. Old units with a book value of £57,580 were sold for £38,003, a loss of £19,577. The quarter recorded a negative quarterly cash flow of £189,114. Profit recovered in the next quarter: net profit tripled to £98,070 in Y5 Q1.

Table 3 compares the two financial years. Sales grew 42.3%, while total operating expenses grew only 19.6%, so the cost base was spread over far more revenue. Gross margin held near 68% even as the price rose only £20 (3.1%), which points to stable unit costs from the new equipment.

Table 3: Annual performance, Year 4 versus Year 5 (authors' calculations from the profit and loss account).

Measure	Year 4	Year 5	Change
Sales (£)	1,047,978	1,491,513	+42.3%
Gross profit (£)	710,615	1,024,150	+44.1%
Gross margin	67.8%	68.7%	+0.9 pts
Operating expenses (£)	594,434	710,881	+19.6%
Operating profit (£)	116,182	313,269	+169.6%
Net profit (£)	100,281	319,869	+219.0%
Net margin	9.6%	21.4%	+11.8 pts
Sales and marketing, % of sales	17.6%	14.1%	−3.5 pts
R&D, % of sales	0.25%	0.21%	−0.04 pts

4.3 Financing, liquidity and working capital

Balance-sheet health improved steadily (Table 4). The £50,000 loan in Y4 Q3 raised gearing to 0.26, but loans were then repaid from profit at about £8,500 a quarter, and gearing ended at 0.05. No equity was issued; shareholder equity grew from £227,322 to £634,982 through retained profit alone. Cash rose from £111,676 to £392,949, and the current ratio passed 11.

Table 4: Liquidity, gearing and working capital by quarter (debtor days = debtors ÷ quarterly sales × 91).

Quarter	Cash (£)	Current ratio	Gearing (loans ÷ equity)	Debtor days
Y4 Q1	111,676	10.4	0.17	40
Y4 Q2	142,072	6.0	0.13	35
Y4 Q3	233,112	7.7	0.26	27
Y4 Q4	43,998	4.3	0.21	35
Y5 Q1	120,511	4.6	0.14	35
Y5 Q2	203,853	8.3	0.10	33
Y5 Q3	299,590	10.3	0.07	28
Y5 Q4	392,949	11.0	0.05	8

4.4 The first retrenchment quarter

Y5 Q4 differs sharply from the quarters before it. Sales fell 20.2% (£404,479 to £322,698) and operating profit fell 64.9% (£93,672 to £32,856). Cost of sales fell 21.7%, so the drop came from lower volume, not lower price. Yet operating expenses *rose* to £190,582, the highest of the period, led by organisation costs up 36% in one quarter (£28,231 to £38,445), consistent with one-off restructuring costs. Debtors also fell from £126,094 to £29,236, which flattered cash and debtor days in the same quarter that trading weakened. Dashboard snapshots from Year 6 point the same way: product stock rose from 41 to 332 units and company valuation fell from a peak of about £1.11m to about £0.80m.

5 DISCUSSION

5.1 Building resources paid off (P1 supported)

The build phase was followed by the strongest growth in the data: annual net profit more than tripled. The gain came less from price than from scale and efficiency. Expenses grew at less than half the rate of sales, and gross margin held steady while volumes rose. This fits the RBV claim that resources which are hard to copy, here trained staff working with automated equipment, support superior returns (Barney, 1991). It also fits human capital theory: the training budget rose 150% and the skills it bought were specific to Smart Bike's process (Becker, 2009).

The promotion mix was a market-facing resource built on evidence. Customer data showed a young customer base, and the team moved spending from broadcast media to social media and exhibitions. This matches research showing that digital engagement shapes awareness and choice among such buyers (Stephen, 2016). Sales and marketing fell from 17.6% to 14.1% of sales while revenue grew, which suggests the spending became more productive.

5.2 Financing followed the pecking order (P2 supported)

The venture never issued equity. It borrowed once, when the equipment programme needed cash beyond retained profit, then repaid the loan from earnings. This is the sequence predicted by Myers and Majluf (1984) and observed among smaller firms by Frank and Goyal (2003). Working capital was also managed with care. Gentle credit control and invoice financing kept debtor days between 27 and 40 days through the growth phase, avoiding the cash strain that often comes with rapid sales growth (Pike and Cheng, 2001).

One caution applies. By Y5 Q4 cash of £392,949 was earning little: interest received was under £3,000 that quarter. Baños-Caballero, García-Teruel and Martínez-Solano (2014) find that performance falls once working capital goes past its optimum. Much of this cash could have funded the R&D and capacity that later came under pressure.

5.3 Retrenchment eroded capability (P3 supported, with caution)

The move to cut staff, pay and equipment was framed as a way to keep the lowest price. In orchestration terms, it divested the very resources that had been bundled into the venture's production capability (Sirmon, Hitt and Ireland, 2007). Dierickx and Cool (1989) note that resource stocks built through steady flows of investment run down when those flows stop, and are slow and costly to rebuild. The first retrenchment quarter shows lower volume, higher one-off organisation costs and a 62.5% fall in net profit. Year 6 snapshots of rising stock and falling valuation point the same way.

The retrenchment also clashed with the venture's own positioning. Smart Bike priced on perceived value, at £675 with minimal discount, and branded itself as "the best" (Hinterhuber, 2008). Cutting the resources behind that claim while chasing the lowest price risks the "stuck in the middle" position Porter (1985) warned against: neither the cheapest nor clearly the best. Schmitt and Raisch (2013) argue that retrenchment works only when it protects the activities that create future value. Here it did the reverse.

The evidence for P3 rests on one audited quarter plus dashboard snapshots, so it should be read as strong indication rather than proof. Other factors, such as competitor moves within the simulation, may also have played a part.

5.4 Strong balance sheet, weakening engine

The most practical finding is a mismatch in signals. In Y5 Q4, every standard health indicator looked better than ever: the highest cash, the highest current ratio, the lowest gearing and the shortest collection period. Yet operating profit had fallen by almost two-thirds. Part of the improvement was itself a by-product of decline, since lower sales leave fewer debtors outstanding. Managers who watch only liquidity and gearing may therefore miss the early erosion of capability.

5.5 The neglected role of R&D

R&D spending stayed at about 0.2% of sales throughout. The product's off-road and weight attributes remained at the lowest level, limiting appeal beyond road commuters. Low and flat R&D also limits absorptive capacity, the ability to recognise and use new technology (Cohen and Levinthal, 1990). Dynamic capabilities theory warns that a resource base which is not renewed loses fit as markets move (Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000). The venture's growth relied on resources built once rather than renewed.

5.6 Theoretical contribution

The case extends resource orchestration theory in two ways. First, it shows divestment chosen by a *profitable* firm for pricing reasons, a case the retrenchment literature has largely ignored (Pearce and Robbins, 1993). Second, it shows that the accounting traces of capability erosion can be masked by working-capital effects in the short run. The build–leverage–retrench sequence offers a simple lens for spotting this pattern in other small manufacturers.

6 CONCLUSION

This study followed a simulated road-bike venture through eight quarters of decisions and results. Investing in people, equipment and targeted promotion was followed by 42.3% sales growth and a tripling of annual net profit (RQ1). Growth was financed by retained profit and one loan, which was then repaid, in line with the pecking order theory, while tight credit control kept working capital in check (RQ2). When the venture switched to cutting the resources behind its capability, sales fell 20.2% and net profit 62.5% within a quarter, even as liquidity and gearing reached their best levels (RQ3).

The central lesson is that resources which create advantage must be sustained, not only acquired. Retrenchment that strips out core capability can undo gains that took a year to build, and standard balance-sheet measures may not reveal the damage in time.

Recommendations

Recommendations for owner-managers of small manufacturers, with the indicator that would show progress.

Recommendations and monitoring indicators

Recommendation	Evidence from the case	Indicator to monitor
Protect core capability when cutting costs; cut overheads and low-value activity first	Staff and equipment cuts preceded a 20.2% sales fall	Output per employee; capacity used
Choose one position and align resources to it	Value-based price of £675 clashed with a lowest-price goal	Price relative to rivals; market share by segment
Put surplus cash to work in R&D and capacity	Cash reached £392,949 while R&D stayed near 0.2% of sales	R&D as % of sales; product attribute levels
Track operating indicators beside balance-sheet ones	Liquidity peaked as operating profit fell 64.9%	Quarterly operating margin; stock in units
Broaden the product's appeal to under-served segments	Students (9.7%) and early retirees (6.6%) were under-served; off-road and weight stayed at level 1	Sales by demographic segment
Keep evidence-led promotion	Shift to social media cut marketing to 14.1% of sales while revenue grew	Marketing cost per unit sold

- **For educators.** Simulation debriefs should ask teams to explain changes in *operating* performance, not only end-of-game cash or valuation, since the two can move in opposite directions (Faria et al., 2009).
- **For future research.** Multi-case or panel studies of simulation teams could test whether the build–leverage–retrench pattern recurs and how long its effects last. Field studies of small manufacturers could check whether the masking effect of working capital seen here also appears in real firms.

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