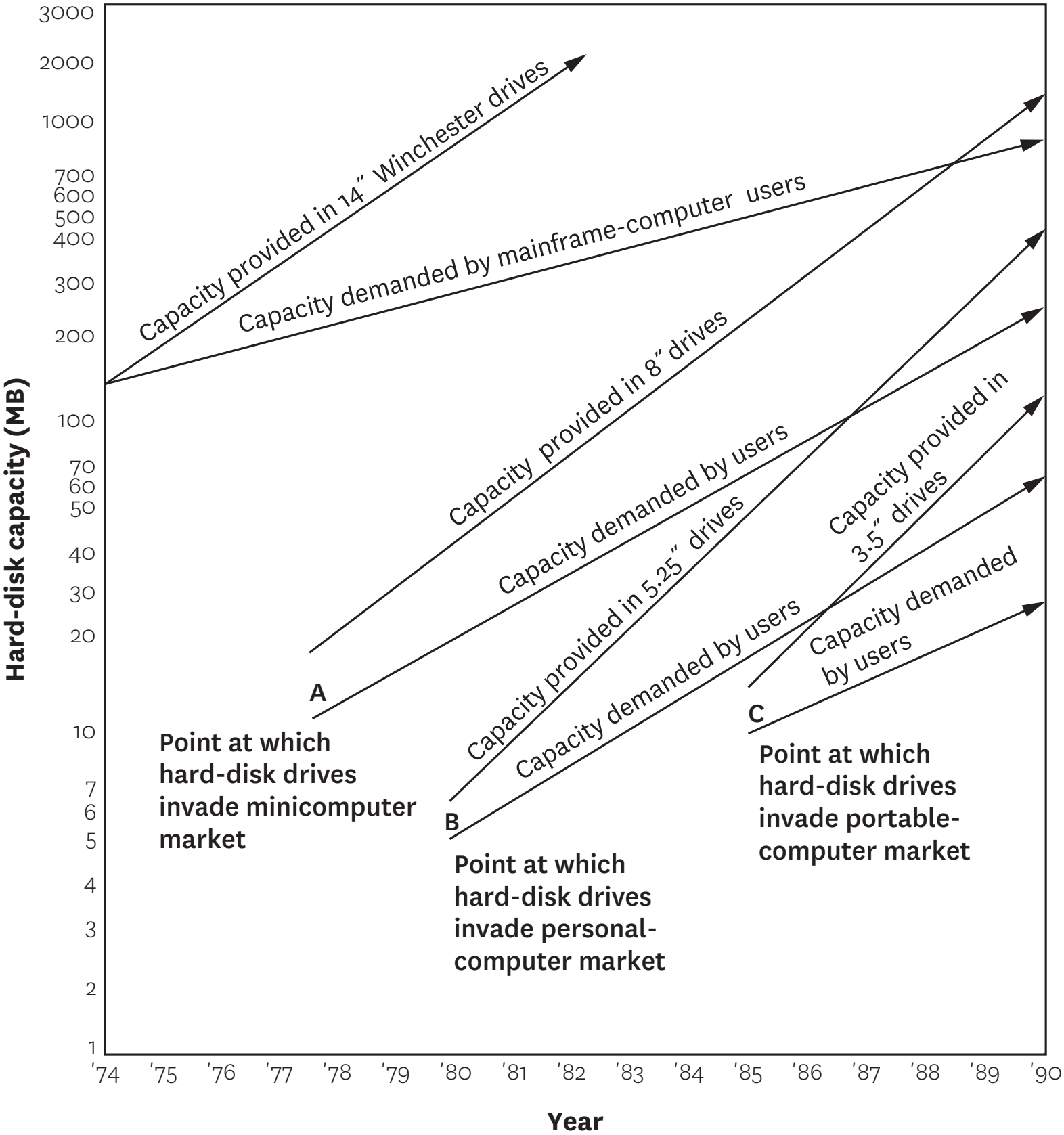
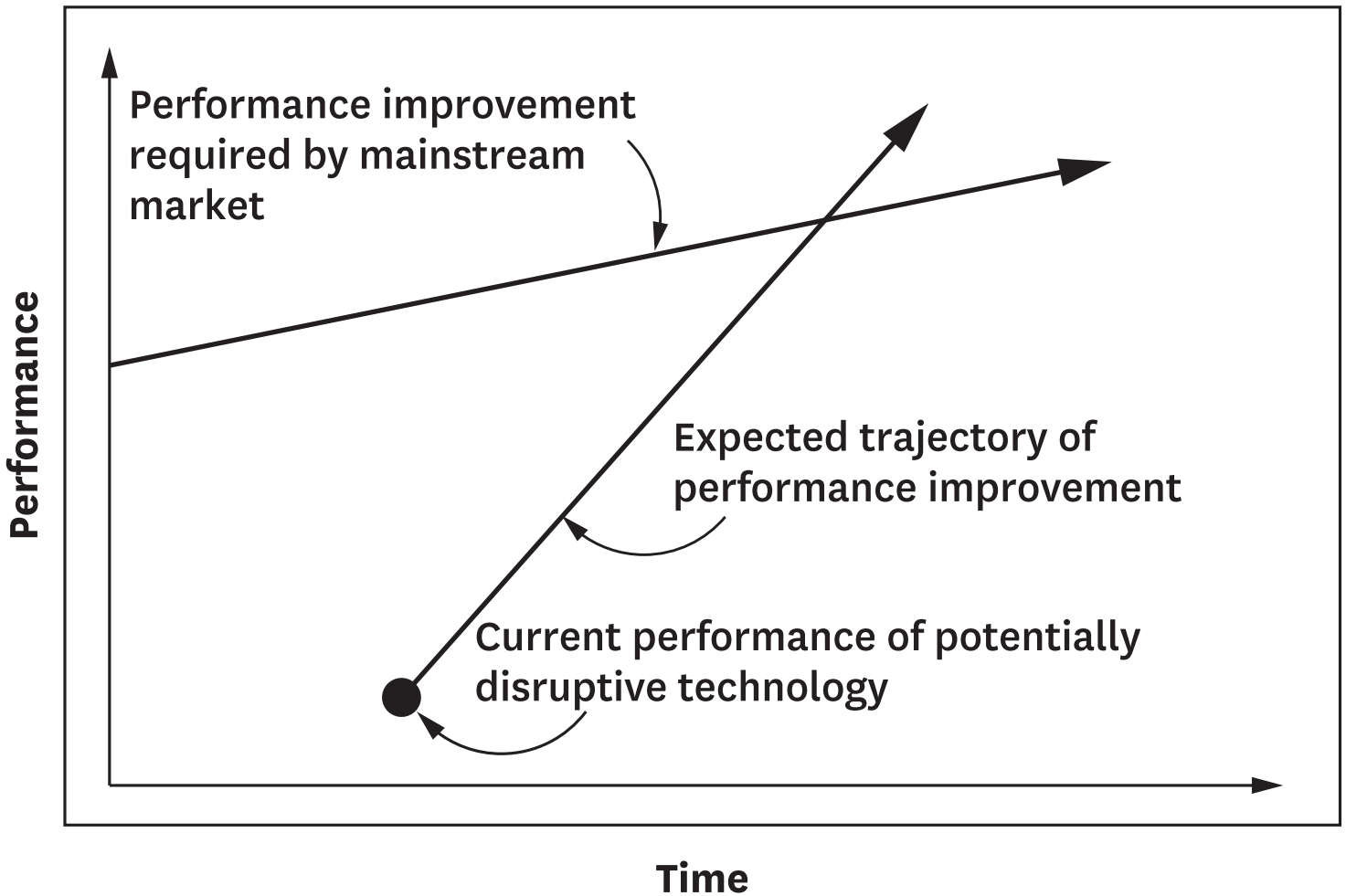
How disk-drive performance met market needs

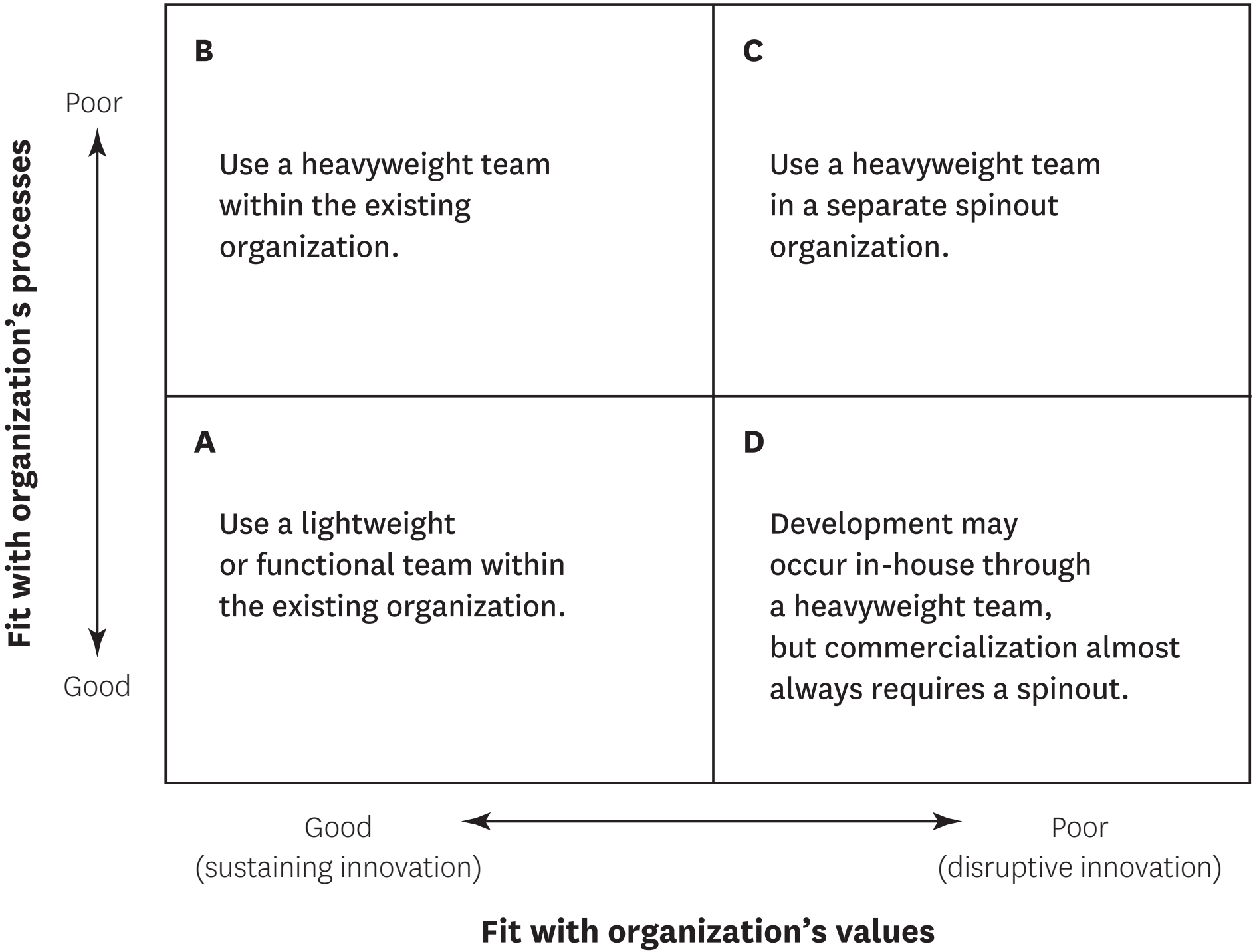


How to assess disruptive technologies

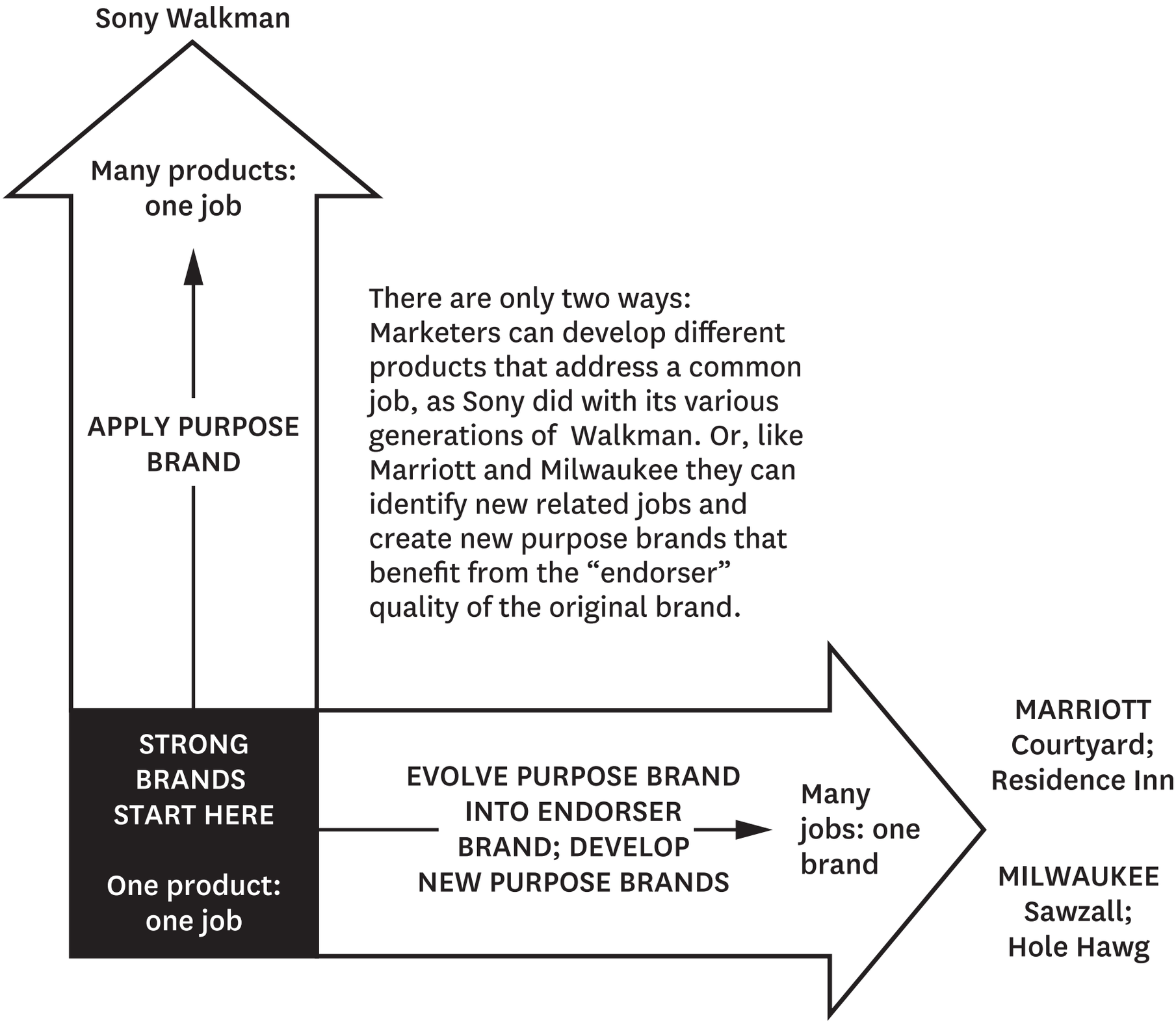


Selecting the Right Structure for Your Innovation

Ify our innovation . . .	Select this type of team . . .	To operate . . .	Because . . .
Fits *well* with your existing values *and* processes	**Functional teams** who work sequentially on issues, or **lightweight teams**—adh oc cross-functional teams who work simultaneouslyo n multiple issues	Within your existing organization	Owing to the good fit with existing processes and values, no new capabilities or organizational structures are called for.
Fits *well* with existing values but *poorly* with existing processes	**Heavyweight team**d edicated exclusively to the innovation project, with complete responsibility for its success	Within your existing organization	The poor fit with existing processes requires new types of coordination among groups and individuals.
Fits *poorly* with existing values but *well* with existing processes	**Heavyweight team**d edicated exclusively to the innovation project, with complete responsibility for its success	Within your existing organization for development, followed by a spin-off for commercialization	In-house development capitalizes on existing processes. A spin-off for the commercialization phase facilitates new values—such as a different cost structure with lower profit margins.
Fits *poorly* with your existing processes *and* values	**Heavyweight team** dedicated exclusively to the innovation project, with complete responsibility for its success	In a separate spin-off or acquired organization	A spin-off enables the project to be governed by different values *and* ensures that new processes emerge.

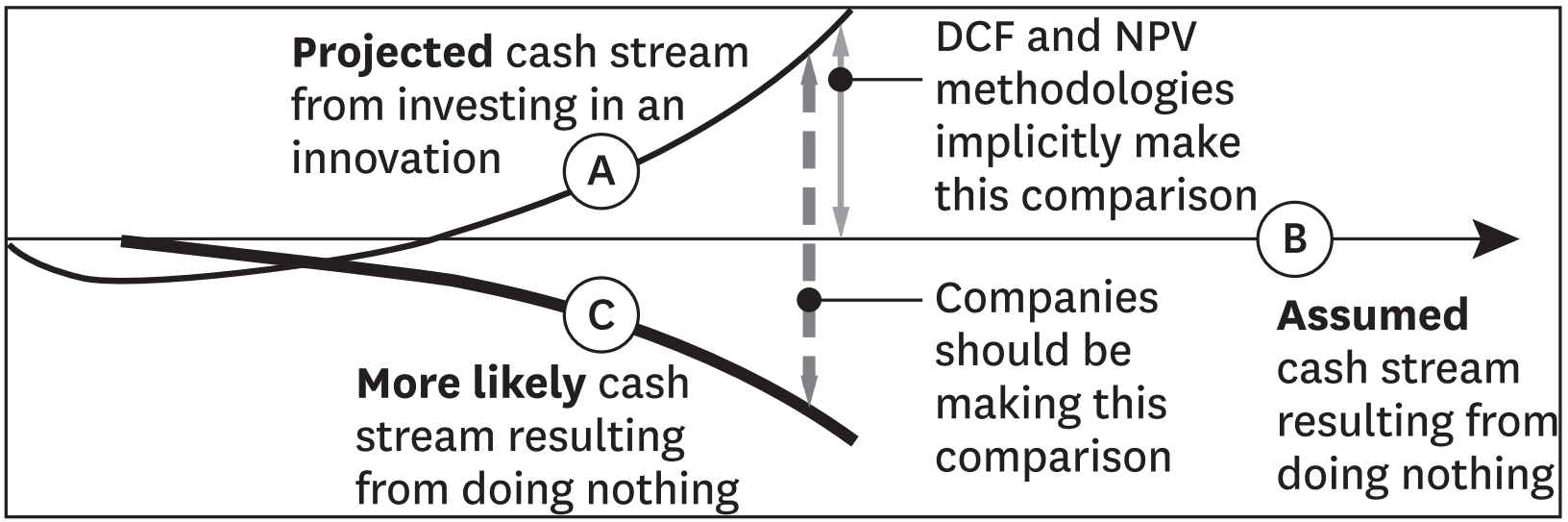

B
Use a heavyweight team within the existing organization.
C
Use a heavyweight team in a separate spinout organization.
A
Use a lightweight or functional team within the existing organization.
D
Development may occur in-house through a heavyweight team, but commercialization almost always requires a spinout.
Poor
Good
Fit with organization's processes
Good (sustaining innovation)
Poor (disruptive innovation)
Fit with organization's values

Extending brands without destroying them



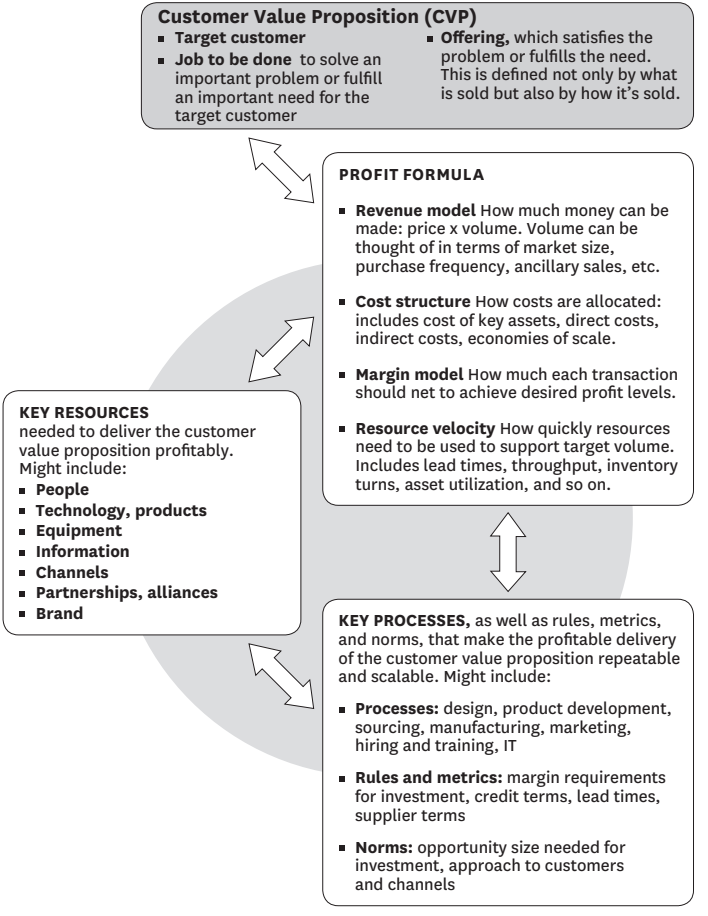
TheD CFt rap

Most executives compare the cash flows from innovation against the default scenario of doing nothing, assuming—incorrectly—that the present health of the company will persist indefinitely if the investment is not made. For a better assessment of the innovation's value, the comparison should be between its projected discounted cash flow and the more likely scenario of a decline in performance in the absence of innovation investment.



An *opportunity* to . . .	Example
Address needs of large groups who find existing solutions too expensive or complicated.	The Nano's goal is to open car ownership to low-income consumers in emerging markets.
Capitalize on new technology, or leverage existing technologies in new markets.	A company develops a commercial application for a technology originally developed for military use.
Bring a job-to-be-done focus where it doesn't exist.	FedEx focused on performing customers' unmet "job": Receive packages faster and more reliably than any other service could.
A *need* to . . .	**Example**
Fendo ff low-end disruptors.	Mini-mills threatened the integrated steel mills a generation ago by making steel at significantly lower prices.
Respond to shifts in competition.	Power-tool maker Hilti switched from selling to renting its tools in part because "good enough" low-end entrants had begun chipping away at the market for selling high-quality tools.

EVERY SUCCESSFUL COMPANY ALREADY operates according to an effective business model. By systematically identifying all of its constituent parts, executives can understand how the model fulfills a potent value proposition in a profitable way using certain key resources and key processes. With that understanding, they can then judge how well the same model could be used to fulfill a radically different CVP—and what they'd need to do to construct a new one, if need be, to capitalize on that opportunity.



HILTI IS CAPITALIZING ON a game-changing opportunity to increase profitability by turning products into a service. Rather than sell tools (at lower and lower prices), it's selling a "just-the-tool-you-need-when-you-need-it, no-repair-or-storage-hassles" service. Such a radical change in customer value proposition required a shift in all parts of its business model.

Traditional power tool company		**Hilti's tool fleet management service**
Sales of industrial and professional power tools and accessories	**Customer value proposition**	Leasing a comprehensive fleet of tools to increase contractors's on-site productivity
Low margins, high inventory turnover	**Profit formula**	Higher margins; asset heavy; monthly payments for tool maintenance, repair, and replacement
Distribution channel, low-cost manufacturing plants in developing countries, R&D	**Keyr esources and processes**	Strong direct-sales approach, contract management, IT systems for inventory management and repair, warehousing

TRADITIONALLY HIGH-MARGIN DOW CORNING found new opportunities in low-margin offerings by setting up a separate business unit that operates in an entirely different way. By fundamentally differentiating its low-end and high-end offerings, the company avoided cannibalizing its traditional business even as it found new profits at the low end.

Establishedbus iness		**New business unit**
Customizeds olutions, negotiated contracts	**Customer value proposition**	No frills, bulk prices, sold through the internet
High-margin,h igh-over-head retail prices pay for value-added services	**Profit formula**	Spot-market pricing, low overhead to accommodate lower margins, high throughput
R&D, sales, and services orientation	**Keyr esources and processes**	IT system, lowest-cost processes, maximum auto-mation

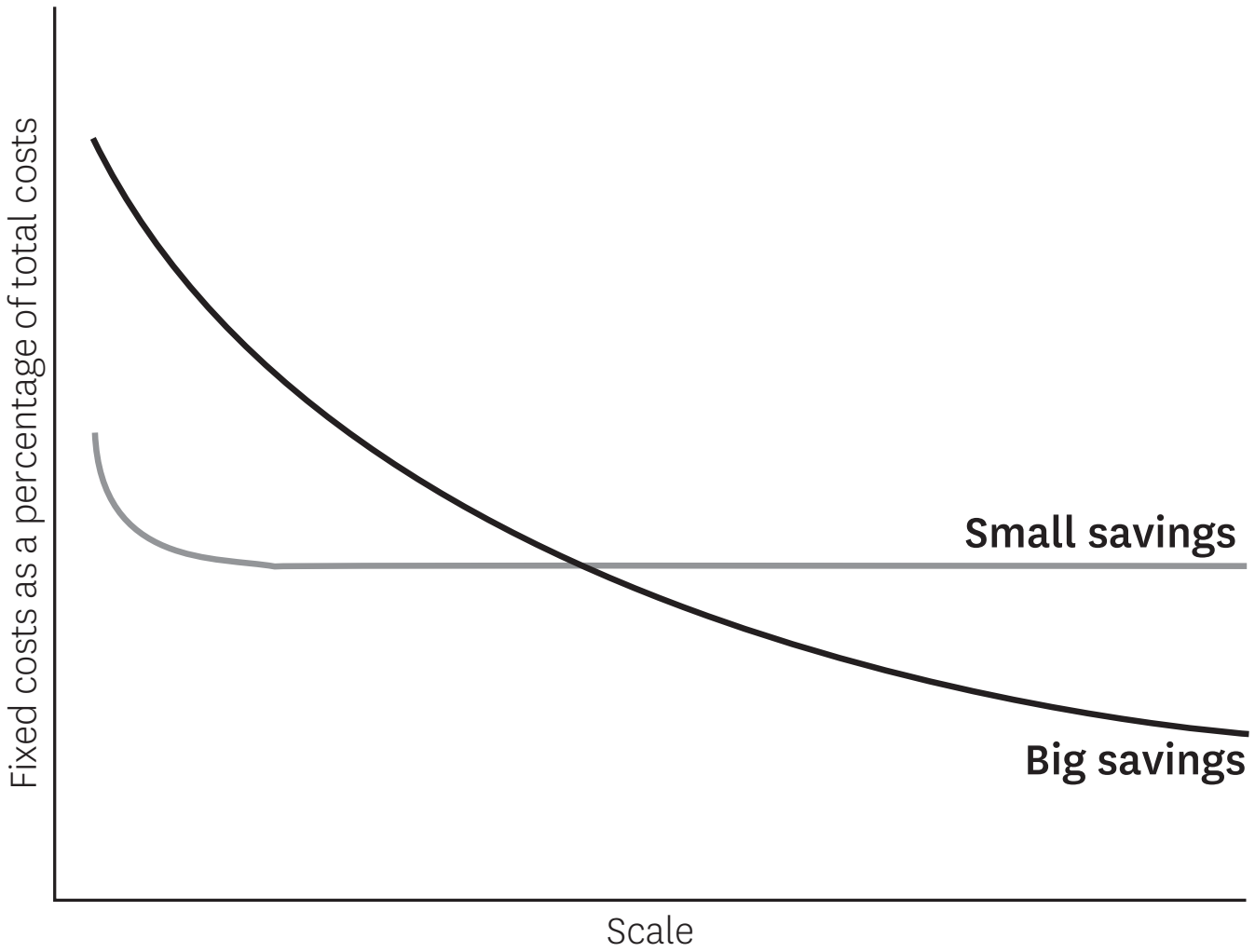
PREDICTING WHETHER THE RESOURCES of a prospective acquisition will improve the output of your company's business model, and so lower costs, is mainly a matter of assessing how compatible they are with your company's resources and processes.

RESOURCES	PROCESSES
WILLTH E acquisition's products fit into my product catalog without creating confusion?	**CAN THE** acquisition's offering be sold according to our sales cycle?
DOI TS customers buy products like ours, and vice versa?	**CAN MY** people readily service the acquired customers?
CAN THE output of the acquisition's factories be used with minimal adjustment by our supply chain and distributors?	**CAN ITS** products be produced in our factories, and vice versa?
DOO UR salespeople have the skills to sell the acquisition's products? Will they be excited to sell them?	**WILL THE** quality of its offerings be enhanced by our rules for managing procurement, IT systems, and quality control systems?

If the resources of the target are compatible with your resources and processes, the acquisition will most likely improve the resource velocity of your profit formula—that is, there is a good chance it will improve turnover or utilization of assets and fixed costs.

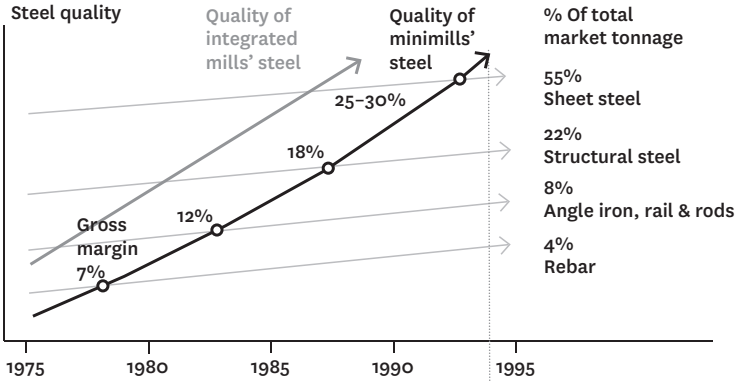
When will increased scale lower costs?

Iffi xed costs represent a large percentage of your total costs, you can reap substantial savings by increasing scale. But if your costs are more variable than fixed, scale increases may require new overhead investments and so delivermi nimalsav ings.

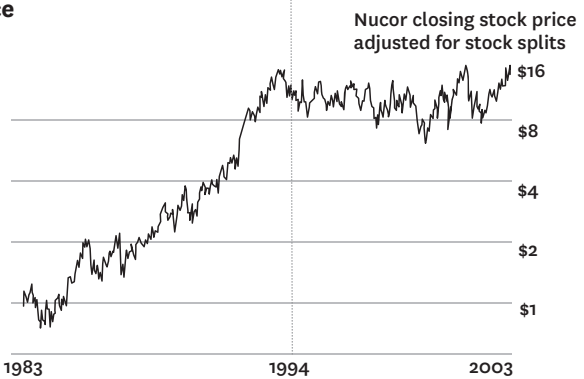


Why disruptive businesses are worth so much

As nucor moves from low-end to high-end segments...



...its stock price explodes.

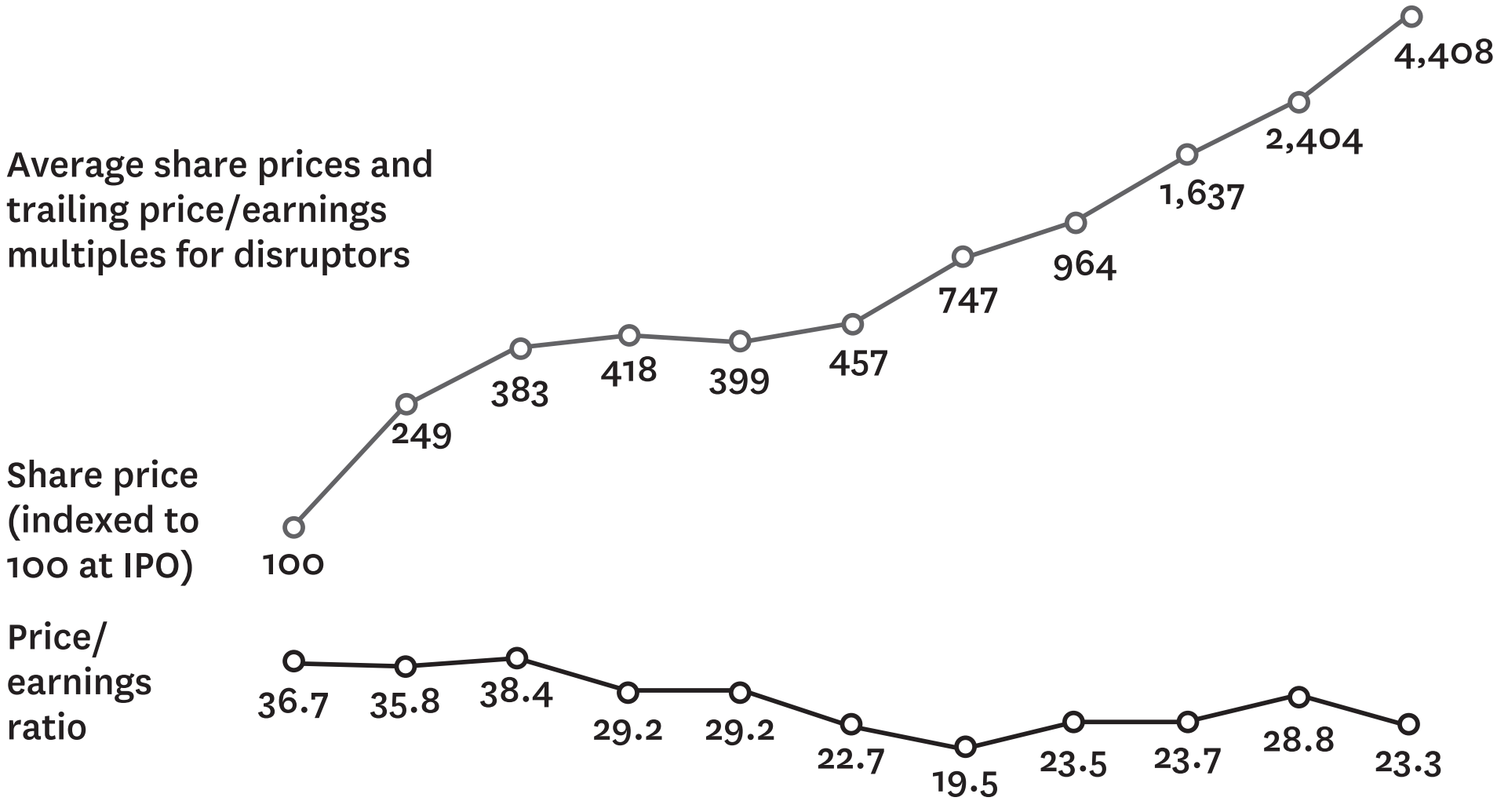


What produces a dramatic increase in a company's share price? Growth that investors weren't predicting. As Nucor developed revolutionary approaches to steel making, the company was able to enter increasingly larger segments of the steel market—each time prompting investors to reconsider Nucor's share price. Once there were no new markets to conquer, the company's share price leveled off.

Source: Bloomberg

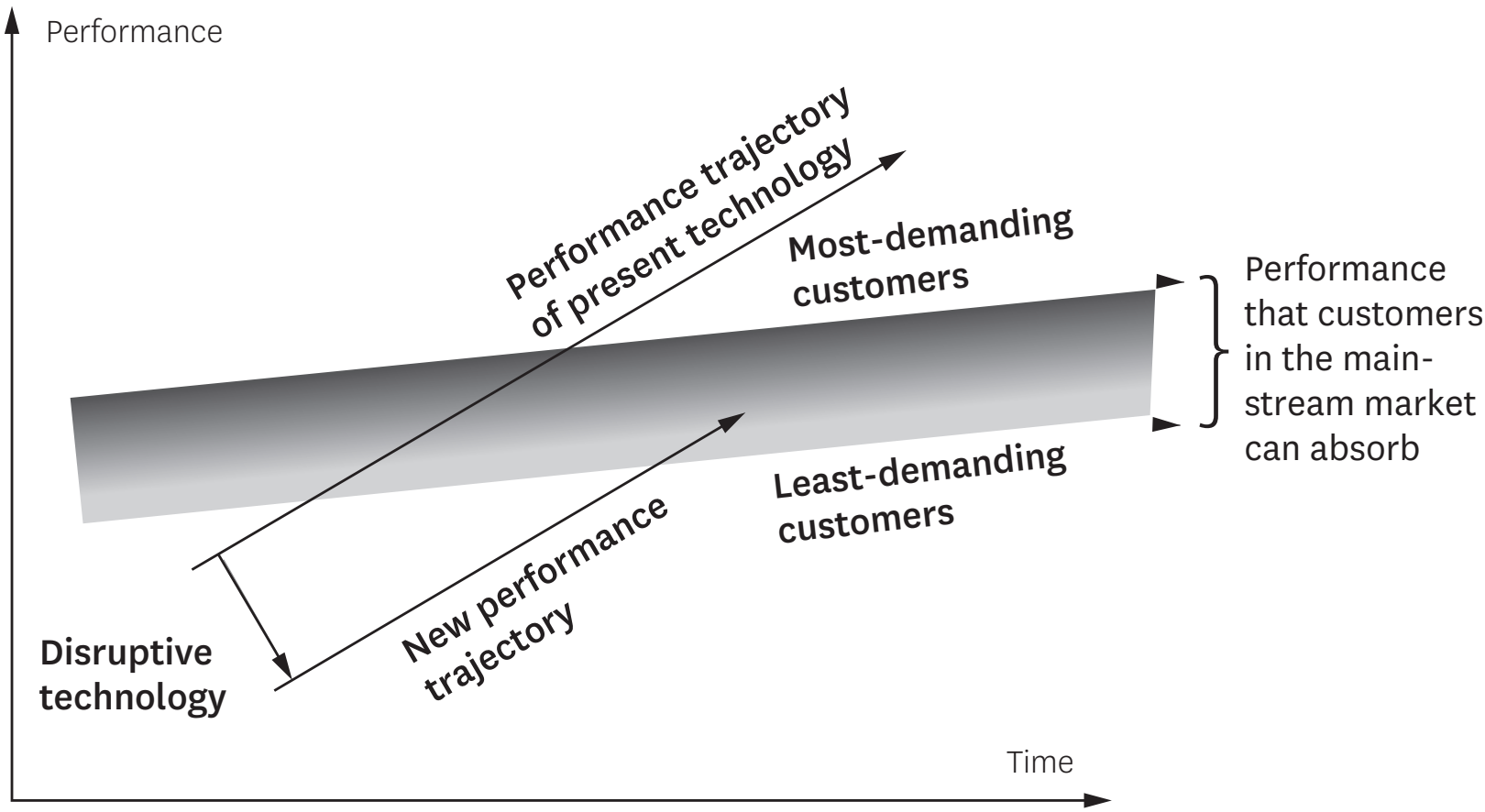
How the market rewards disruptors

High price/earnings ratios (which indicate a high share price relative to net income or profits) in a sample of 37 disruptive companies led analysts to believe their shares were overpriced at the time of their IPOs. The extraordinary performance of these companies in the market, however, suggests that their shares were in fact persistently underpriced.



Sources: Compustat, Thomson Reuters, Bloomberg

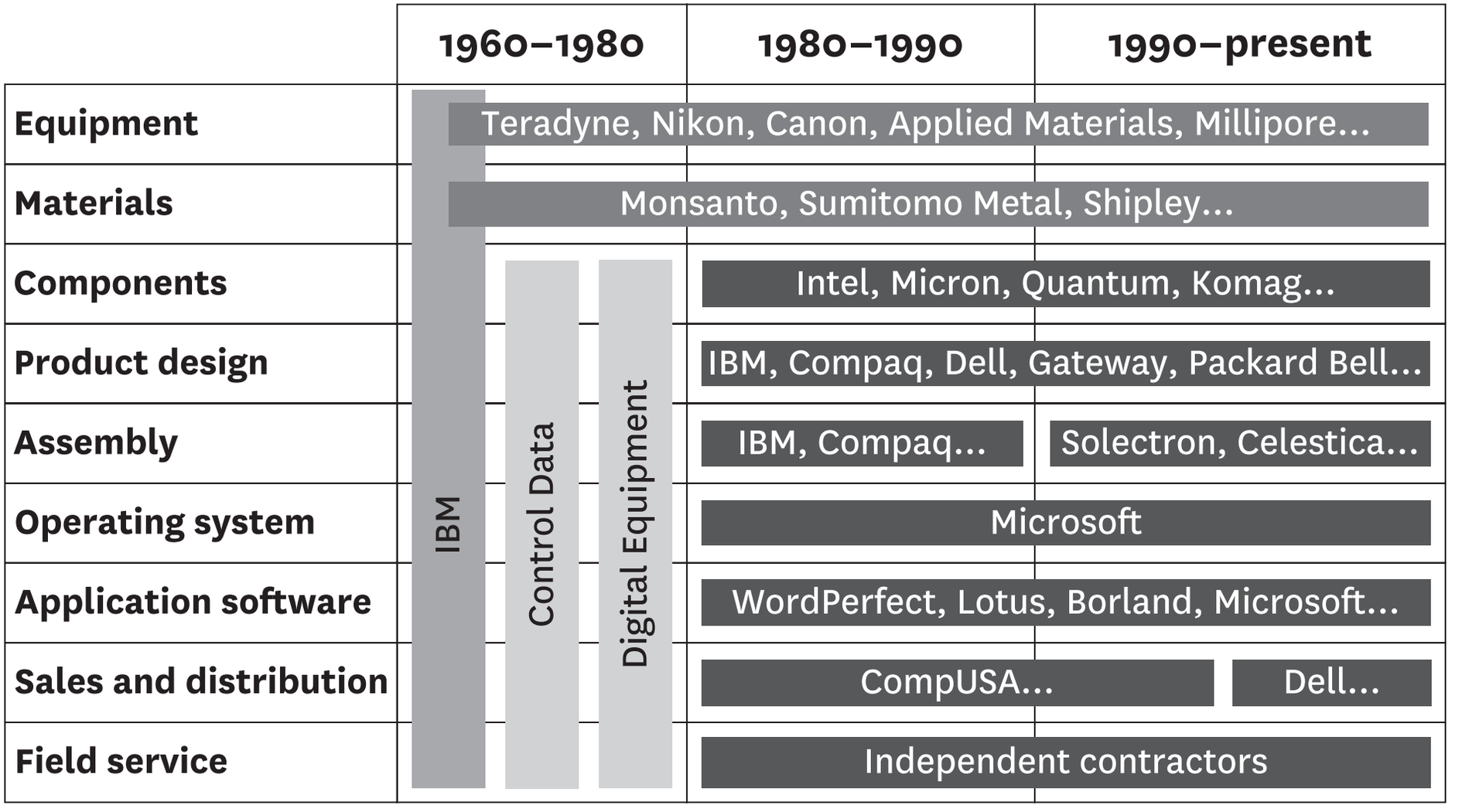
THE DISRUPTIVE TECHNOLOGIES MODEL CONTRASTS the pace of technological progress with customers' ability to use that progress. According to the model, there are two types of performance trajectories in every market. One trajectory, depicted by the shaded area, shows how much improvement in a product or service customers can absorb over time. The other trajectory, shown by the solid lines, depicts the improvement that innovators in the industry generate as they introduce new and enhanced products.



Almost always, this second trajectory—the pace of technological innovation—outstrips the ability of customers in a given tier of the market to absorb it. This creates the potential for innovative companies to enter the lower tiers of the market with "disruptive technologies"—cheaper, simpler, more convenient products or services. Almost always, the leading companies are so absorbed with upmarket innovations addressed to their most sophisticated and profitable customers that they miss the disruptive innovations. Disruptive technologies have caused many of history's best companies to plunge into crisis and fail.

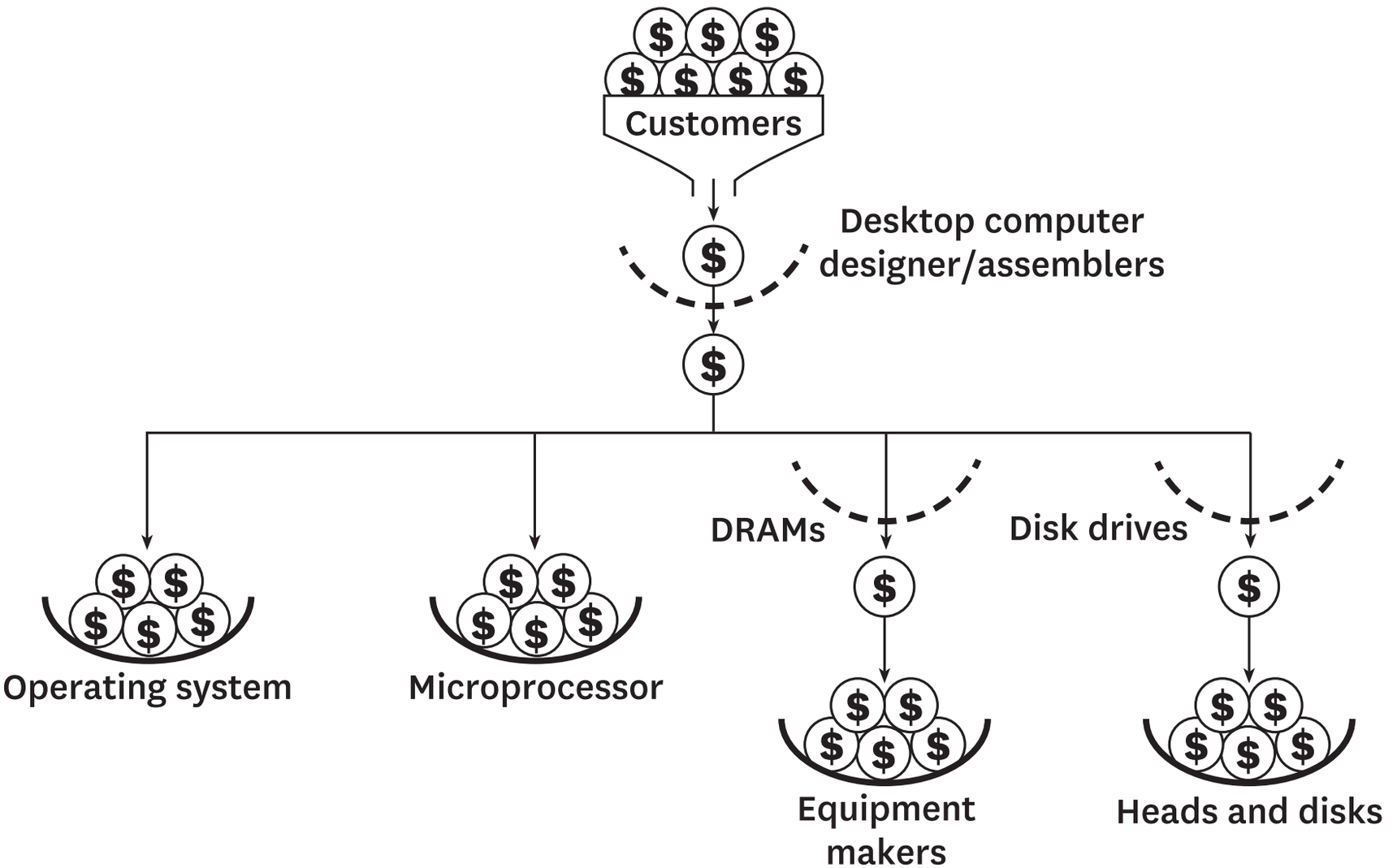
The dis-integration of the computer industry

Mainframes and minicomputers were never good enough or fast enough or cheap enough to create a mass market and were therefore always the province of large, integrated players who built their machines from their own proprietary designs and components. The PC, though, very quickly became good enough for the average consumer, giving rise to an army of specialized players.



Where the money went in the PC industry

As PCs became good enough for mainstream users, profits flowed from the customers through the assemblers (the IBMs and Compaqs of the world) to lodge in the component makers—the operating system maker (Microsoft), the processor maker (Intel), and initially to the memory chip makers and disk drive manufacturers. But as DRAM chips and drives became good enough for the assemblers, the money flowed even further up the value chain to DRAM equipment makers and head and disk suppliers.



LEGACY BUSINESS
Handheld GPS

DISRUPTER
Cell Phone GPS

WHAT JOBS DO CUSTOMERS WANT THIS PRODUCT TO PERFORM?

"Inform me about my surroundings"

"Get me to the meeting on time"

"Get me home safely"

In case of emergency, people still value the reliability of a rugged, waterproof GPS device with a long battery life, so creating durable devices with even longer-lasting batteries may help secure this niche. But disrupters may overcome new-technology barriers to making those improvements.

EASY TO DISRUPT

DISRUPTER ADVANTAGES

GPS apps are included in the smartphone price

GPS data are easily integrated with information from other apps, such as restaurant reviews and reservation systems

DISRUPTER DISADVANTAGES

Phones are fragile

Phones must be small enough to fit into a pocket, restricting their size and weight

Batteries must be recharged more frequently because the phones are used for other tasks

LEGACY BUSINESS
Auto Sales

DISRUPTER
Car Sharing

WHAT JOBS DO CUSTOMERS WANT THIS PRODUCT TO PERFORM?

"Get my kids safely to school"

"Help me get where I need to go when I need to go there"

"Provide a mobile office"

Drivers who work in their cars value the ability to store and optimally arrange papers, laptops, luggage, and other items. Moving them from car to car would be highly inconvenient and time-consuming, so car sharing is unlikely to overcome this business-model barrier any time soon.

HARD TO DISRUPT

DISRUPTER ADVANTAGES

More cost-effective than ownership for infrequent drivers

No need for insurance

Parking is included

Users can drive a variety of makes and models

DISRUPTER DISADVANTAGES

Less cost-effective than ownership for frequent and long-distance drivers

Cars aren't always available when needed

LEGACY BUSINESS
Railroads

DISRUPTER
Cars, Trucks, and Planes

WHAT JOBS DO CUSTOMERS WANT THIS SERVICE TO PERFORM?

"Help me get home for the holidays"

"Get my products to customers quickly"

"Help me operate my business efficiently"

Manufacturers value rail's far lower cost so much that they locate factories on a rail line. For many customers this business model advantage currently outweighs both the speed advantage of airplanes and the flexibility advantage of trucks. So standardized rail containers, which can be stacked and easily transferred to ships or trucks, create a powerful ecosystem barrier to disruption.

HARD TO DISRUPT

DISRUPTER ADVANTAGES

Roads connect far more places than rail lines do

Trucks can more easily deliver items from any factory to any destination on a road

Airplanes can move people and cargo much faster than rail can

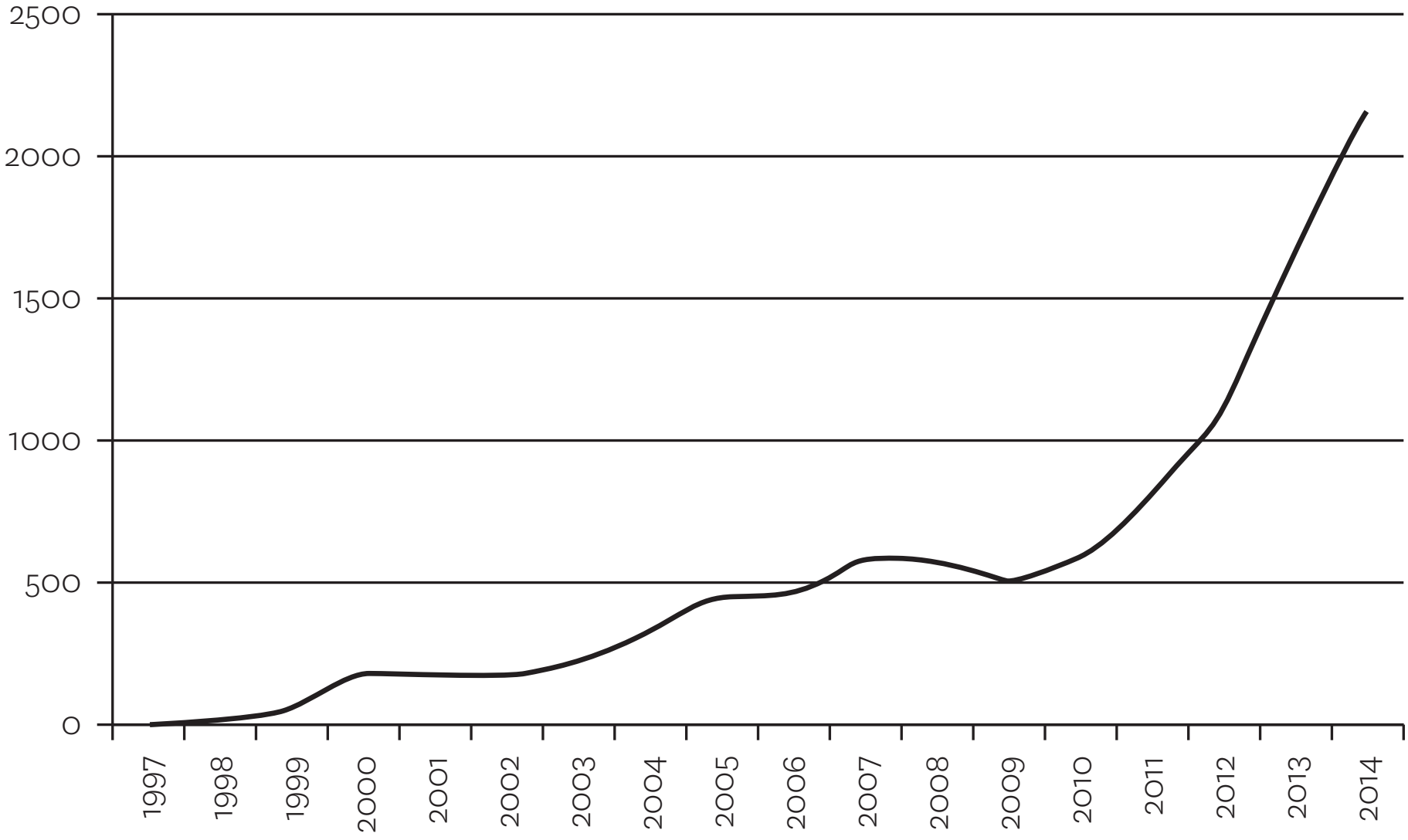
Airplanes can move people and cargo overseas

DISRUPTER DISADVANTAGES

Higher variable costs

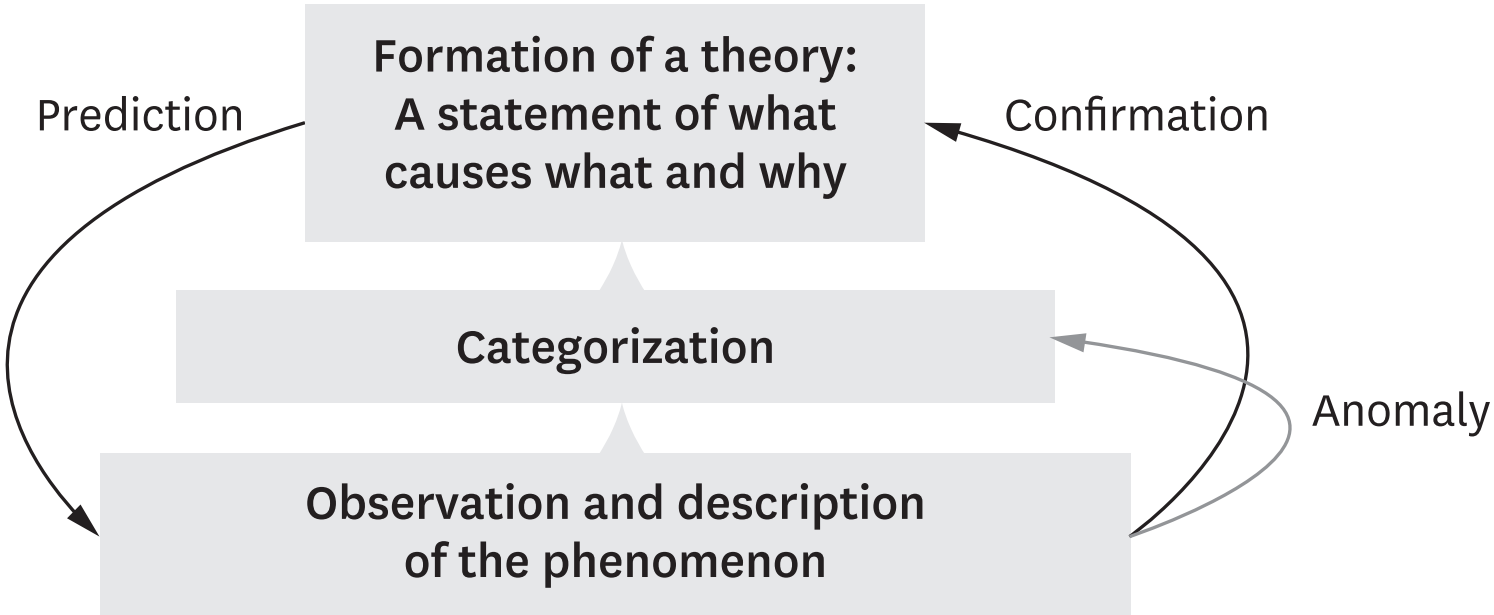
Higher labor costs

The Ubiquitous "Disruptive Innovation"



"Disruptive innovation" and "disruptive technology" are now part of the popular business lexicon, as suggested by the dramatic growth in the number of articles using those phrases in recenty ears.

Source: Factiva analysis of a wide variety of English–language publications.


Formation of a theory:
A statement of what
causes what and why
Prediction
Confirmation
Categorization
Anomaly
Observation and description
of the phenomenon