

## Case 13-3

## Texas Instruments and Hewlett-Packard

Texas Instruments (TI) and Hewlett-Packard (HP) developed, manufactured, and sold high-technology electric and electronic products. Texas Instruments had three main lines of business in 1984: *components*, which included semiconductor integrated circuits, semiconductor subassemblies, and electronic control devices; *digital products*, which included minicomputers, personal computers, scientific instruments, and calculators; and *government electronics*, which included radar systems, missile guidance and control systems, and infrared surveillance systems. The three businesses generated 46 percent, 19 percent, and 24 percent, respectively, of TI's sales in 1984. Hewlett-Packard operated in two main lines of business: *computer products*, which included factory automation computers, engineering workstations, data terminals, personal computers, and calculators; and *electronic test and measurement systems*, which included instruments that were used to evaluate the operation of electrical equipment against standards, instruments that would measure and display electronic signals, voltmeters, and oscilloscopes. These businesses generated 53 percent and 37 percent, respectively, of HP's 1984 sales. Summary financial information for each company is presented in Exhibit 1.

Although Texas Instruments and Hewlett-Packard competed in similar industries, the strategies chosen by these two firms were very different. Exhibit 2 summarizes five major concepts related to the content of strategy for

**EXHIBIT 1**  
**Summary**  
**Financial**  
**Information**  
 (\$ in Millions)

Texas Instruments					
	1980	1981	1982	1983	1984
Assets	\$2,414	\$2,311	\$2,631	\$2,713	\$3,423
Equity	1,165	1,260	1,361	1,203	1,541
Sales	4,075	4,206	4,327	4,580	5,742
Operating profit	379	253	236	(288)	526
ROI	32.5%	20.1%	17.3%	n.a.	34.1%
Hewlett-Packard					
	1980	1981	1982	1983	1984
Assets	\$2,337	\$2,782	\$3,470	\$4,161	\$5,153
Equity	1,547	1,890	2,349	2,887	3,545
Sales	3,099	3,578	4,254	4,710	6,044
Operating profit	523	567	676	728	860
ROI	33.8%	30.1%	28.8%	25.2%	24.2%

Source: Steven C. Wheelright, "Strategy, Management, and Strategic Planning Approaches," *Interfaces*, January-February 1984.

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**EXHIBIT 2** Contrasting Strategies of TI and HP

	Texas Instruments	Hewlett-Packard
	<b>Business Strategy</b>	
	Competitive advantage for large, standard markets based on long-run cost position	Competitive advantage for selected small markets based on unique, high-value/high-features products
	<b>Functional Strategy</b>	
<b>Marketing:</b>	High volume/low price Rapid growth Standard products	High value/high price Controlled growth Custom features
<b>Manufacturing:</b>	Scale economies and learning curve Vertical integration Large, low-cost locations	Delivery and quality driven Limited vertical integration Small, attractive locations
<b>R&amp;D:</b>	Process and product Cost driven Design to cost	Product only Features and quality driven Design to performance
<b>Financial:</b>	Aggressive Higher debt Tight ship	Conservative No debt Margin of safety (slack)

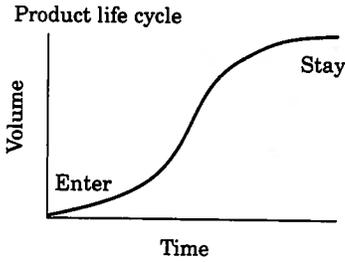
both Texas Instruments and Hewlett-Packard. Perhaps the most significant distinction between TI and HP was their generic business and functional strategies (Exhibit 2). They pursued very different approaches. TI preferred to pursue competitive advantage based on larger, more standard markets and a long-term, low-cost position. HP, on the other hand, sought competitive advantage in selected smaller markets based on unique, high-value, high-feature products. The functional strategies used to support those desired competitive advantages also differed.

With regard to the product life cycle (Exhibit 3), TI favored early entry, followed by expansion and consolidation of its position, resulting in a dominant market share when the product matured. HP, on the other hand, tended to create new markets, but then exited (or introduced other new products) as cost-driven competitors entered and the market matured. It is not surprising that the two firms viewed prices and costs, the third area, differently. TI emphasized continual price cuts to parallel cost reduction in order to build volume and take advantage of shared experience and learning. HP, on the other hand, put less emphasis on manufacturing cost reductions and held prices longer so that profit margins expanded during the initial periods. The early returns generated allowed early exit from the market with good returns on investment and provided funds for further product research and development.

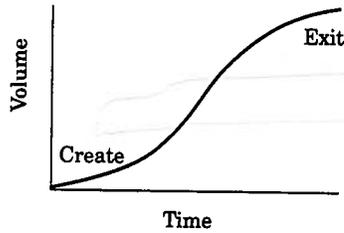
A fourth concept that highlights their differences in strategy is the product process matrix, which matches the product life cycle with its production counterpart, the process life cycle. HP concentrated on more flexible production processes (such as job shop and batch operations) to meet the needs of its custom and low-volume markets, while TI concentrated on more capital-intensive and cost-effective production processes (assembly lines and continuous flow operations) to supply its more standard, high-volume markets.

**EXHIBIT 3 Differences in Strategy between Texas Instruments and Hewlett-Packard**

**A TEXAS INSTRUMENTS**

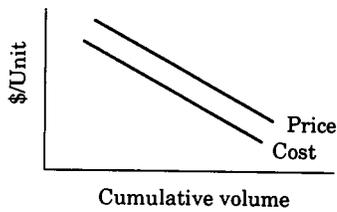


**B HEWLETT-PACKARD**

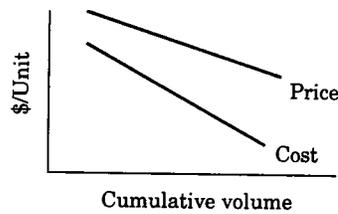


TI tended to enter early in a product's life cycle, and stayed through maturity. HP tended to create a new product and then replaced it when it matured.

**C Costs and Prices (Learning Curve)**

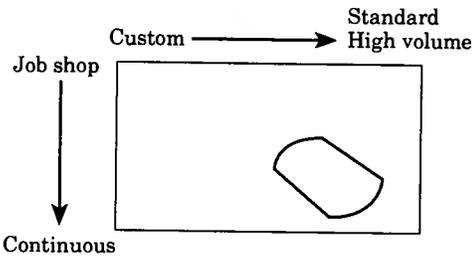


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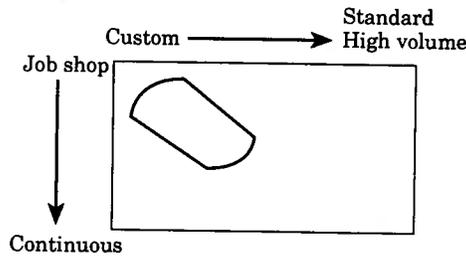


TI emphasized aggressive cost improvements, with equally aggressive price cuts. HP desired cost improvements, but sought higher margins and held prices longer.

**E Product/Process Matrix**

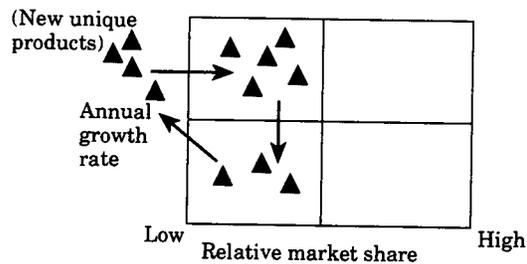
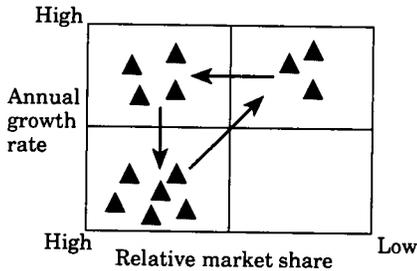


**F**



TI concentrated on more capital-intensive, cost-effective production processes to match high-volume standard product needs. HP concentrated on flexible production processes to match low-volume, more custom product needs.

**G Portfolio: Positioning and Resource Movement**



TI sought a balanced portfolio of businesses where mature, large businesses provide resources for young, high-growth businesses. HP sought all high-growth, high-margin businesses that met their own resource needs, largely on an individual basis.

A fifth concept, portfolio analysis, further highlights differences in the firms' strategies. TI looked for a portfolio that included low-growth businesses with dominant market shares to provide cash for a select group of high-growth businesses with lower market shares but with the prospect of becoming dominant, high-growth businesses, and eventually "cash cows." HP, on the other hand, wanted all high-growth businesses with dominant market shares, and to reallocate major resources only to fund new businesses. In fact, the traditional solution to any profit problem at HP had been new products and new businesses.

## Question

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Given the differences in strategy between the two firms, what would you expect would be the differences between TI and HP in their planning and control systems: strategic planning systems; budgeting systems; reporting systems; performance evaluation systems; and incentive compensation systems?