DELL QUESTIONS

1. How and why did the personal computer industry come to have such low average profitability?

2. Why has Dell been so successful?

3. Prior to recent efforts by competitors to mach Dell (1997-1998), how big was Dell's competitive advantage? Specifically, calculate Dell's advantage over Compaq in serving a corporate customer.

4. How effective have competitors been in responding to the challenges posed by Dell's advantage? How big is Dell's remaining advantage?

Dell entered an extremely unattractive industry

Five Forces Analysis of the PC Industry

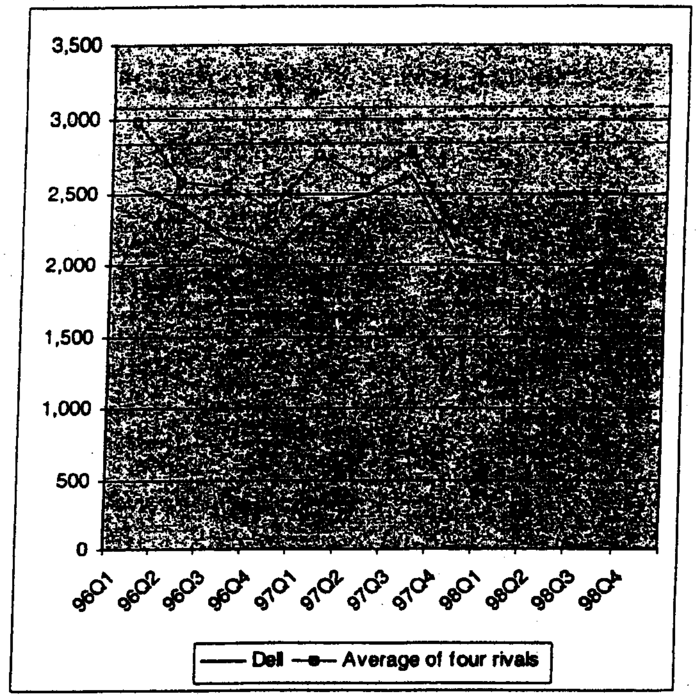
Competitive Force	Comments
Bargaining power of suppliers (very high)	• Proprietary standards + customer desire for compatibility ⟹ Microsoft and Intel positioned to extract profits from industry • Other inputs are basically commodities
Bargaining power of customers (high and rising)	• Wintel standards ⟹ end users can switch among PC brands easily • End users growing more confident (⟹ less brand loyal and less in need of assistance) as portion of first-time buyers declines • Resellers and retailers have some grip on end-user relationships, giving them ability to extract price protection, etc. • Threat of backward integration by resellers as channel consolidates
Intensity of rivalry (very high)	• Wintel standards ⟹ little to distinguish among machines of leading companies except price => vigorous price competition • Growth of processing power outstrips growth in need for processing ⟹ immense "excess capacity" and saturation ⟹ fight for market share • Intel and Microsoft encourage competition
Threat of new entry (moderately high)	• Capital costs of manufacturing facility very low • Stream of low cost entrants (e.g., white box makers); contract manufacturers • Wintel standards ⟹ limited opportunity to differentiate products • Absolute cost advantages hard to maintain since most inputs are available at fixed prices. Very little of the cost structure can be influenced by the PC maker
Threat of substitutes (growing)	• Rise of network PCs, electronic advertisers, workstations

In spite of that, Dell became a resounding success. Its execution capabilities have been unsurpassed.

Dell's Distinctive Activities

Category of Activity	Distinctive Aspects	Comments
Firm Infrastructure	• Seasoned managers hired after 1993 crisis • Complete alignment of the organization of structure, metrics, incentives, and culture with customer needs	
Procurement	• Close integration with suppliers. JIT delivery of parts. Co-location. Reduced number of suppliers	• Consistent with build-to-order operations
Operations	• PCs manufactured to order. Assembly commences only After order is received • In-line installation of standard and proprietary software	• No finished goods inventory and very little WIP or raw materials. Especially important when component prices decline very rapidly
Outbound logistics	• PCs shipped directly to customers. Items such as monitors never pass through Dell facilities	• Consistent with build-to-order and direct sales approaches. Fits with knowledgeable customer base
Marketing and sales	• Direct sales: essentially no resellers; orders directly from customers • Large outside sales force • Online ordering via www.dell.com. Premier Pages	• Consistent with focus on knowledgeable customers. Reduces channel costs. Permits direct contact with customers, promoting knowledge of customer and ability to forecast sales
After-sales service	• Technical support via personnel and www.dell.com. Online records for each Customer. • On-site service through third parties	• Note electronic backbone of operations, increasingly centered around www.dell.com. Permits service comparable to that of resellers at lower cost. Fits with stable product line

Prices of Comparable PCs Configured for the Consumer Market (from **Exhibit 10a**)



Prices of Comparable PCs Configured for the Business Market (from **Exhibit 10b**)

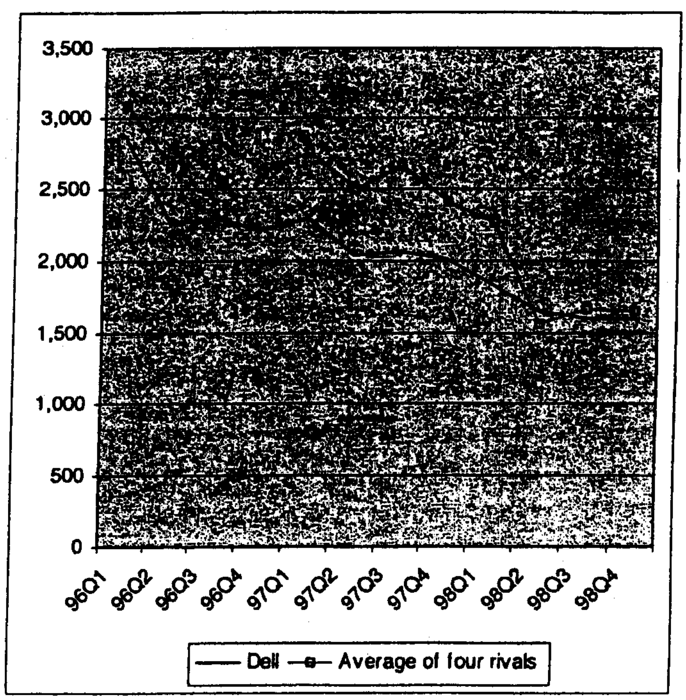
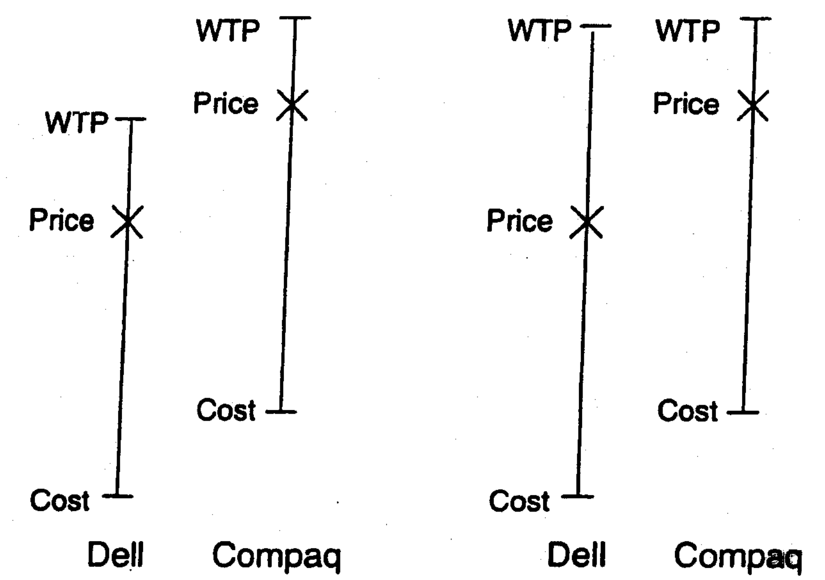


Exhibit TN-5 Alternative Interpretations of Dell's Competitive Advantage in 1996

Which do you think is going on in the PC industry in 1996-97?



Relative Cost Analysis in 1996

Assumptions		
Machine:	PC equipped for a corporate customer	
Customer:	Corporation	
Competitor:	Compaq / reseller combination	
Dell price:	$2,313	(average of quarterly figures for 1996 in Exhibit 10b)
Dell gross margin in 1996 (FY97):	21.5%	(Exhibit 6)
Rate of decline of component prices:	0.6% per week (equal to 25-30% per year, per p. 5)	
Annual cost of capital:	20%	
Dell days of inventory:	15.0	(251/(7759-1666)*365, from Exhibit 6)
Competitor days of inventory:	65	(30 + 35, from p. 11)
Channel markup:	7%	(high end of range on p. 5)
Calculations		
Dell's cost of goods sold for one PC:	$1,816	(= $2,313 * (1 – 21.5%))
Competitor's COGS, higher due to slower inventory turn:	$1,896	(= $1,816 / 0.994^((65-15)/7))
Dell advantage due to...		
Inputs purchased later:	$80	(= $1,896 - $1,816)
Lower inventory carrying costs:	$50	(= $1,816 * (65 – 15) / 365 * 20%)
No channel-related costs:	$58	(= $2,313 * 2.5%)
No channel markup:	$127	(= $1,816 * 7%)
Total Dell advantage:	$315	
Dell advantage as a percent of revenue	13.6%	

Chronology of Rivals' Efforts to Match Dell

	IBM	Compaq	Hewlett-Packard	Gateway
1990	Joint Mfg Authoriz'n			
1991				
1992	Integration & Assembly *Ambra*			
1993	Enhanced Integration & Assembly			
1994	*Ambra shut down*			
1995	Authorized Assembly (Model 0's)	Build to channel forecasts		
1996		*PC orders by toll-free number*		
1997		Tandem acquisition Optimized Distribution Model	Extended Solutions Partnerships	ALR acquisition (servers) Gateway Major Accounts Gateway Country Stores
1998	Business web site *Consumer web site* Netfinity Direct	DEC acquisition DEC to market PCs DirectPlus	Campaign to win resellers Business web site *HP Shopping Village*	Focus away from major accounts Gateway Partners (resellers) Headquarters relocated

Moves directed at consumer market in italics

Relative Cost Analysis in 1998

Assumptions		
Machine:	PC equipped for a corporate customer	
Customer:	Corporation	
Competitor:	Compaq / reseller combination	
Dell price:	$1,977	(average of quarterly figures for 1998 in Exhibit 10b)
Dell gross margin in 1996 (FY97):	22.5%	(Exhibit 6)
Rate of decline of component prices:	1% per week	(p. 5)
Annual cost of capital:	20%	
Dell days of inventory:	7.0	(273/(18,243-4,106)*365, from Exhibit 6)
Competitor days of inventory:	45	(p. 11)
Channel markup:	5%	(low end of range on p. 5)
Calculations		
Dell's cost of goods sold for one PC:	$1,532	(= $1,977 * (1 – 22.5%))
Competitor's COGS, higher due to slower inventory turn:	$1,618	(= $1,532 / 0.99^((45-7)/7))
Dell advantage due to...		
Inputs purchased later:	$86	(= $1,618 - $1,532)
Lower inventory carrying costs:	$32	(= $1,532 * (45 – 7) / 365 * 20%)
No channel-related costs:	$48	(= $1,977 * 2.5%)
No channel markup:	$77	(= $1,532 * 5%)
Total Dell advantage:	$243	
Dell advantage as a percent of revenue	12.3%	