

# The consumer PC market in the United States

A report prepared for the Office of Fair Trading by  
Competa IT bv & Knowledge Oxide Ltd.

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# 1 EXECUTIVE SUMMARY

- 1.1 This report investigates the structure and direction of the consumer PC market in the United States and the extent to which the information and service needs of consumers are being met within it.

## Market structure

- 1.2 There is overwhelming evidence that the US consumer PC market is saturated.
- 1.3 Owners have been increasingly reluctant to replace their existing PCs, resulting in longer product lifecycles in both the consumer and business markets.
- 1.4 A slowdown in the pace of recent innovation has impacted upon consumers' perceptions of the PC. PCs are increasingly perceived to be mainstream consumer electronics products rather than high technology items.

## Market direction

- 1.5 Declining demand and lower margins have led to significant consolidation amongst PC manufacturers serving the consumer market. There are six manufacturers who now dominate consumer PC sales.
- 1.6 As PC consumers have become more experienced, the appeal of specialist retailers and manufacturers has grown. This is especially true of manufacturers selling direct and/or online.
- 1.7 As a consequence of market saturation, lower margins on PC sales and consolidation amongst manufacturers, the consumer PC market has been driven almost exclusively by aggressive pricing for more than 18 months. Special promotions, rebates and upgrades have become **the** key way for retailers and manufacturers to differentiate themselves amongst consumers.
- 1.8 In view of falling revenues from consumer PC sales, US retailers and manufacturers have shifted their attention towards alternative sources of revenue growth – most especially from new peripheral product categories such as LCD monitors, personal digital assistants and recordable CD-drives. However, the single largest proportion of retail IT revenue – more than 29 per cent - is now generated from sales of printing consumables such as ink cartridges, laser toners and specialist printing papers.

- 1.9 Retailers and manufacturers have aggressively targeted US consumers in recent years in pursuit of the greater revenues afforded by printing consumables. Strategies include aggressive pricing on printer hardware and the targeting of digital imaging technologies at the mass market.

### **Meeting the information and service needs of PC consumers**

- 1.10 US consumers rely heavily on pre-sales advice and information from sales staff in large electronics stores. Moreover, product advertising remains a key source of both general and pricing information for US consumers. However, online sources have also become a key point of reference for US consumers seeking product information and an increasingly important tool with which to find (comparative) pricing information.
- 1.11 The key advantage of retail stores – the added value of face-to-face sales advice, particularly for inexperienced consumers - has declined in relevance as increasing numbers of consumers have become experienced in the purchase of home PCs and more confident in using direct channels to make those purchases.
- 1.12 Faced with declining margins, manufacturers have in recent years aggressively targeted the cost-base of their after sales repair and technical support operations. A primary means of cutting support costs has been to shift front-line technical support away from call centre operations to the internet.
- 1.13 US consumers are offered a range of enhanced and extended support and service options under extended warranty programmes provided by manufacturers and retailers at extra cost. While the extended support options offered by PC manufacturers are still largely tailored to the needs of business customers, a much wider range of added value support services focused more clearly on the needs of consumers are provided by US retailers.
- 1.14 Given that sales of extended warranties account for a major proportion of marginal profit generated by PC sales, retailers have sought, not only to expand the range of support products they offer, but also the market for them. A recent development in the consumer PC market in the US has been the introduction of extended warranties into the online retail market.

## Sources of consumer complaint and dissatisfaction

- 1.15 Recent large-scale surveys of PC consumers in the US, suggest that the quality of technical support offered by PC manufacturers declined significantly during 2001. As noted earlier, faced with unprecedented pressures on retail margins, PC manufacturers have sought to reduce the cost base of their technical support operations. It appears that, as a result, the technical support that consumers receive is getting worse.
- 1.16 Surveys also suggest that, while the reliability of consumer PCs has not declined significantly, PC reliability continues to be a key source of concern for consumers.
- 1.17 The quality of repair services, particularly those offered by retail stores, is a further source of concern amongst US consumers.
- 1.18 Consumer dissatisfaction about extended warranties is particularly focused on the perception that PC retailers and manufacturers often misrepresent the services provided for by these products. Problems include delays in the provision of on-site technicians and the failure of sales staff – particularly in retail stores - to accurately represent what is and is not covered by extended warranty products.

## Initiatives

- 1.19 There are few examples of attempts that seek to address current sources of consumer complaint and dissatisfaction. In part, this can be explained by the approach US regulators have traditionally taken to issues of consumer detriment: namely, to allow for the market itself to develop the institutions, policies and practices required for resolution of these issues.
- 1.20 However, the few initiatives that do exist are almost exclusively associated with after sales issues and offer the prospect of significant consumer redress when problems arise.

## 2 THE STRUCTURE AND DIRECTION OF THE CONSUMER PC MARKET IN THE UNITED STATES

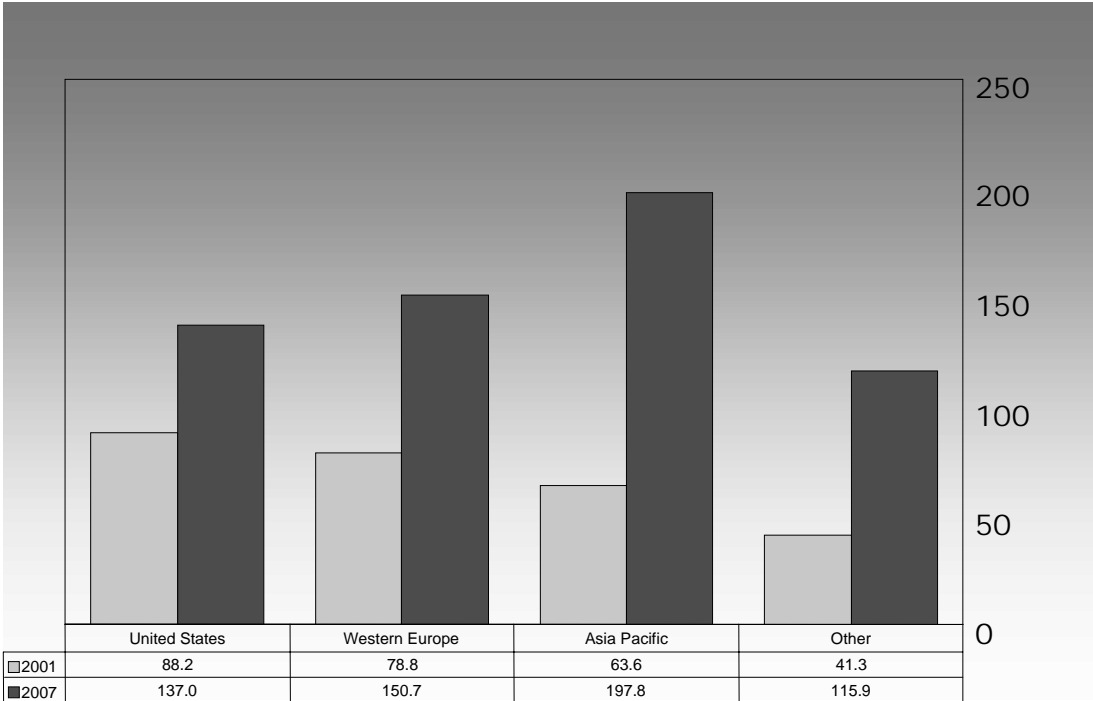
2.1 In order to accurately appraise the extent to which the consumer PC market is meeting the informational needs of US consumers, we first need to understand how that market is structured and where it is heading. This is the aim of the first part of this report.

### The US PC market: prolonged weakness

2.2 The United States remains the driving force of the global PC industry accounting for 34 per cent of total sales (Banc of America Securities, 2002) and 38 per cent of both commercial and retail revenues (Emarketer, 2001a). It also comprises 32 per cent of all home PCs and 26 per cent of all non-home PCs currently in use around the world (Computer Industry Almanac, 2001).

FIGURE 2.1: HOME PCS IN USE WORLDWIDE, 2001 AND 2007 (IN MILLIONS)

Source: Computer Industry Almanac, 2001



- 2.3 However, despite its pre-eminence, the US PC market is in the midst of significant change. Driven by unprecedented declines of more than 25 per cent in consumer PC sales (IDC, 2001a), overall sales were down by 12.2 per cent during 2001 (Banc of America Securities, 2002).
- 2.4 The decline in sales has also impacted on revenues. While revenues from commercial PC sales remained static during 2001, those from consumer PC sales contracted by 15.8 per cent over the same period (Emarketer, 2001a).
- 2.5 The decline in revenues from consumer PC sales has been further aggravated by intense downward pressure of retail prices. While Banc of America Securities (2002) estimates a 3.7 per cent decline in the average selling price of all types of PC unit in the US market, aggressive discounting by manufacturers and retailers has led to much steeper price falls in some retail categories. For example, NPD Techworld (2002a) estimates that the average retail price of notebook computers in the US fell by 12.7 per cent during 2001.
- 2.6 The downturn in the US PC market is in part explained by the general slowdown in the US economy during 2001. A return to growth in the US during 2002 will likely result in a modest increase in consumer PC sales. IDC's latest revised forecast suggests that consumer PC sales will increase by 7.6 per cent in 2002 from the historic lows of the previous year (IDC, 2002a).
- 2.7 Despite any short-term improvement in the economy, however, the prolonged downturn in demand for consumer PCs has highlighted more deep-rooted problems confronting manufacturers and retailers in this market.

## Market saturation

- 2.8 There is overwhelming evidence that the US consumer PC market is saturated. Penetration rates for home PCs in the United States are amongst the highest in the world with current estimates suggesting that 61 per cent<sup>1</sup> of households own at least one PC (Odyssey, 2002) and over 26 per cent<sup>2</sup> of households own two or more. However, after a near doubling of penetration between 1995 and 2000, the growth in PC ownership now appears to have stalled (Odyssey, 2002).

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<sup>1</sup> In 2000, Scarborough Research (2000) estimated that at least 10 major US cities already had penetration rates in excess of this figure.

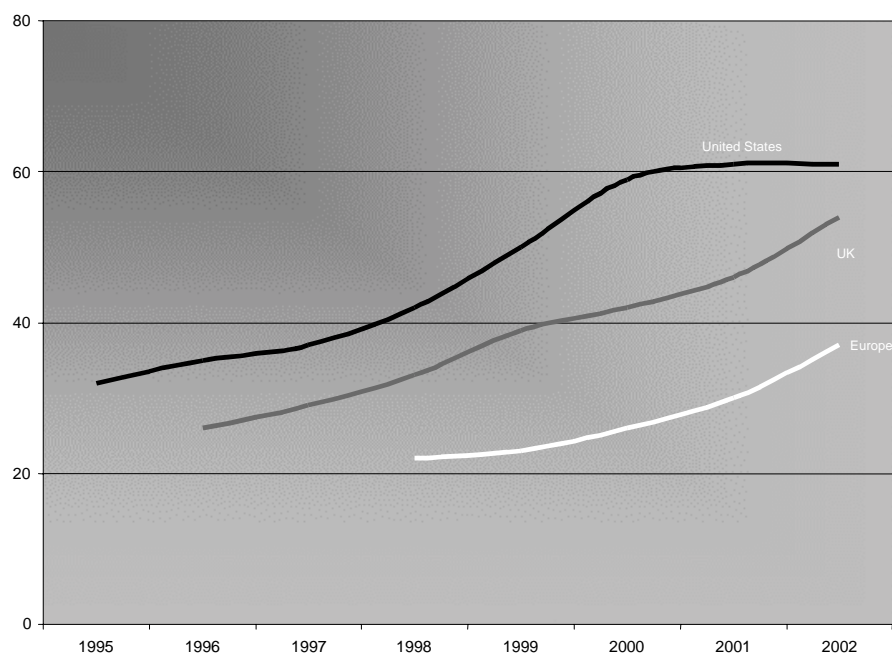
<sup>2</sup> Competa/Knowledge Oxide estimate. According to Scarborough Research (2000), a number of US cities had achieved penetration rates in excess of 70 per cent by the end of 1999.

2.9 Evidence of market saturation is confirmed by a Forrester Research study of US households intending to purchase PCs during 2001. Of these households, 64 per cent already owned at least one PC and were intending to purchase replacement or additional units for the home. Further, a recent survey by the US Consumer Electronics Association of consumers who do not yet own a PC reveals that 52 per cent have no intention of purchasing a PC in the future and only 32 per cent intend to do so within three years (CEA, 2002).

2.10 There are undoubted barriers to PC ownership amongst certain segments of the consumer market, particularly around issues of affordability (NTIA, 1999). However, as Sean Baenen of Odyssey told the *Puget Sound Business Journal* earlier this year, 'most households without a PC report they don't have one because they don't believe they need one.'

FIGURE 2.2: HOME PC PENETRATION, 1995-2002 (AS PER CENT(%) OF HOUSEHOLDS WITH AT LEAST ONE PC)

Source: Odyssey/OECD/OFTEL/Global Industry Analysts



### Longer PC lifecycles

2.11 Declining demand from first-time buyers suggests that the primary source of sales and revenue growth will be those consumers who already own PCs. This has traditionally involved owners upgrading/replacing existing models in order to

take advantage of new technologies and/or new operating systems and applications. Central to the success of this approach has been to ensure that consumers have had a compelling reason to replace their existing PC. Recently, however, there have been few functional innovations to stimulate such replacement purchases – rather innovations have tended to focus almost exclusively on PC performance.

- 2.12 But as one commentator recently argued, 'few, if any of us, have a true need for a faster PC. Virtually any PC bought new in the past three years will run today's operating systems and applications just fine (with the possible exception of needing some added RAM). Since the vast majority of consumers use PCs for Web surfing and email, most of their perception of the speed of their systems is based on modem throughput, not CPU or graphics chip speeds' (Piven, 2001). This is a view echoed by IDC's Director of Client Computing, Roger Kay, 'From a technological perspective, we're seeing the "good enough" phenomenon...The megahertz are now available to do all that's needed [from an end user standpoint]. The constraints are in software, in infrastructure, and in the end user himself. The industry needs a compelling package to make users upgrade, and an Intel P4 and Microsoft Windows XP are not enough.' As a result, users have been increasingly reluctant to replace their existing PCs resulting in longer product lifecycles in both the consumer and business markets (Harte Hanks, 2001; Piven, 2001). This has placed additional pressures on a market already weakened by the effects of saturation.

### **The PC as commodity**

- 2.13 However, a more serious and lasting effect of the current failure to innovate may be the impact it has had on consumer perceptions of the PC as a high-technology product. Historically, PCs have been able to command the price premiums associated with technological innovation. However, the current lack of innovation in the PC industry has cast doubt on whether such premiums can continue to be justified. Increasingly, in the minds of consumers (and many industry analysts) the PC has matured into a technology comparable to other products in the consumer electronics market.
- 2.14 Given the ubiquity of the Windows operating system in the consumer market, the vast majority of PCs are functionally identical and any differences between them are those of speed, reliability and design. As such, and despite the protestations of manufacturers (Enrado, 2002), PCs have assumed the character of mainstream consumer electronics products such as TVs and VCRs. As Andy Kessler, a partner at Velocity Capital Management, puts it, 'PCs have become commodities sold more on the basis of designer colours than innovative

features.' Crucially, given that commodity businesses work at significantly lower margins than those oriented to high-technology products, pressure on revenues is likely to become an entrenched feature of the consumer PC market in the future.

## Emerging trends in the consumer PC market

2.15 Market saturation, extended product lifecycles and the entrenchment of lower margins have given rise to a number of important developments within the US consumer PC market. These include:

### **Consolidation amongst manufacturers and retailers**

2.16 Declining demand and lower margins has led to significant consolidation amongst PC manufacturers serving the consumer market. Where previously the US consumer market sustained a variety of large-, mid- and small-sized manufacturers, it is now dominated by just six. In the interim, manufacturers such as IBM, Acer, NEC, Packard Bell and Zenith have all dropped out of the retail PC market unable to generate profitable returns.

2.17 Today, in excess of 95 per cent of shelf space allocated to desktop PCs by leading PC retail stores in the United States is occupied by just four manufacturers: HP/Compaq, Sony, Emachines and Apple<sup>3</sup>. According to recent figures from NPD Techworld, the newly-combined HP/Compaq alone accounts for two-thirds of all US retail stores' sales of PCs (NPD Techworld, 2002b). Meanwhile, in the direct-sales channel, two manufacturers – Dell and Gateway – account for more than half of all retail PC sales.<sup>4</sup>

2.18 These manufacturers have sought to entrench their dominant positions within the consumer PC market by clearly differentiating their brands to appeal to specific types of PC buyer. While HP/Compaq appeals to the mass market, Gateway has focused on semi-professional users and Dell on the more knowledgeable consumer. And while Emachines has aggressively targeted consumers in search of low-price machines, Sony and Apple have sought to leverage their superior brand recognition at the high-end of the market.

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<sup>3</sup> While Apple does not manufacture PCs (based on Intel architecture and a Microsoft operating system), it is appropriate to include its activities here – as a manufacturer of PCs as 'personal computers' in a more generic sense.

<sup>4</sup> Competa/Knowledge Oxide estimate

2.19 Consolidation is also evident amongst PC retailers in the United States. In part reflecting the recent shift in perceptions of PCs as mainstream consumer electronics products, consumer PC sales are now dominated by a relatively small number of large retail store groups (see Table 2.7). These include, large electrical retailers - led by Best Buy, Circuit City and Radio Shack –computer superstores –such as CompUSA and California-based Fry's Electronics – and office supplies stores – including Office Max, Office Depot and Staples. Together, these retail outlets account for nearly two-thirds of all sales from retail outlets in the United States.

FIGURE 2.3: MANUFACTURERS' SHARE OF PC SALES AT LEADING PC RETAIL STORES IN THE US, APRIL 2002

Source: NPD Techworld

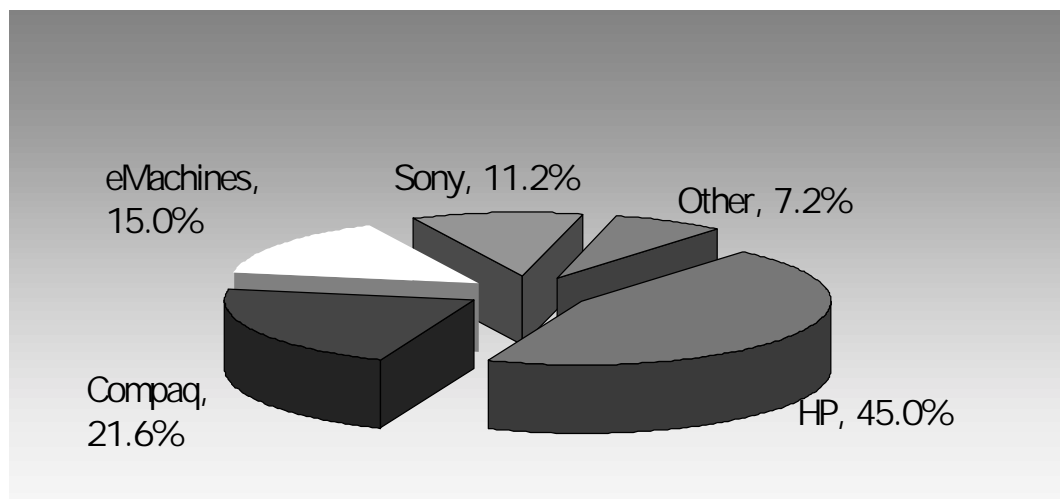
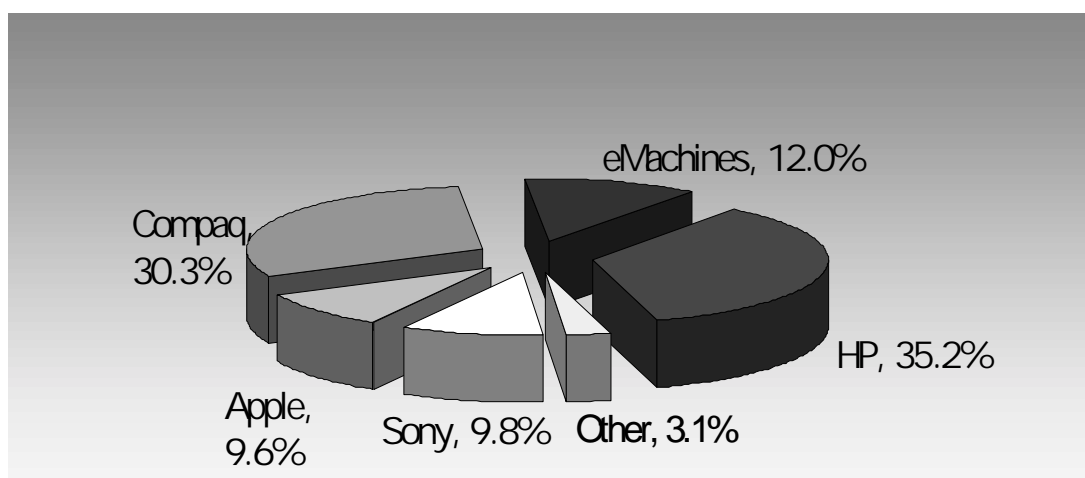


FIGURE 2.4: MANUFACTURERS' AVERAGE SHARE OF SHELF SPACE AT LEADING PC RETAILERS IN THE US, MAY 2001 - MAY 2002

Source: ARS



### **The growth of direct-sales and online channels**

- 2.20 As noted earlier, the majority of US consumers intending to purchase PCs are existing owners as opposed to first-time buyers. As consumers have become more experienced so the base of potential buyers to whom more specialist retailers and manufacturers can appeal has expanded. This is especially true of direct-sell manufacturers who because they lack the provision of pre-sales advice required by inexperienced consumers have traditionally targeted the more knowledgeable business customer. However, faced with increasing numbers of consumers seeking to purchase replacement or additional PCs, direct-sell manufacturers have recently sought to target the home PC market more aggressively.
- 2.21 This move has been led by Dell whose aggressive pricing during 2001 saw its share of consumer sales increase by more than 50 per cent. During 2002, the web-based retailer has sought to advance further into the consumer PC market through its Direct Store Program which has seen it open a chain of manned kiosks in shopping malls enabling potential consumers to use Dell systems and peripherals before they purchase them online. If the initial concept, involving 21 kiosks in seven cities proves successful, Dell intends to expand it across the country during 2002 and 2003.
- 2.22 The move by Dell into the consumer PC market is indicative of a more general shift to online purchasing amongst the growing numbers of PC consumers already experienced in purchasing PCs. Less dependent on face-to-face sales advice, US consumers are forecast to purchase up to 40 per cent of their PCs online by 2004 (IDC, 2000).

### **Aggressive pricing**

- 2.23 As a consequence of market saturation and lower margins on PC sales, the US consumer market has been driven almost exclusively by aggressive pricing for more than 18 months. In particular, promotional offers in the form of mail-in rebates, gift cards and interest-free credit has become **the** key way for retailers and manufacturers to differentiate themselves amongst consumers. Retailers often combine custom rebates and special offers with manufacturers' rebates, aimed at encouraging consumers to buy a bundle of hardware - usually a desktop PC, monitor and printer. Such offers are becoming increasingly important because most retailers are now selling PCs for almost identical prices (ARS, 2002).
- 2.24 Sales promotions such as rebates are now a permanent feature of the US consumer electronics market and though they are not new among PC retailers, the fervour with which they currently are being used is. Retailers and manufacturers began to use rebates aggressively to clear out inventory during

early 2001 and to boost sales as the market slowed throughout the rest of the year. Now rebates are being used more generally to make the best of the still sluggish PC market.

- 2.25 Direct-sell manufacturers are also actively using promotions to attract potential consumers. Dell, for example, has aggressively promoted its desktop PCs with free hardware upgrades. One promotion that has all but disappeared, however, is the free memory upgrade, because of increases in the cost of memory since last year. Manufacturers have replaced free memory upgrades with other promotions involving CD-RW upgrades, hard drive upgrades and free shipping

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## HOW PC BUNDLES WORK

PC bundles, the promotional strategy of offering consumers a PC system, monitor, and printer all in one 'bundle,' have spawned some of the most competitive marketing tactics in the PC/PC-peripherals industry. Currently, the retail PC bundle market is dominated by a single player: HP/Compaq.

PC bundles are a vital source of market share for printer vendors. 'Ultra-Low End' printers priced around \$99 and below are primarily used in PC bundles and represent nearly half of all printer sales. Those operating in the PC bundle market use three distinct tactics to earn market share: mail-in rebates, direct retailer programs, and the vertical PC bundle.

Mail-in rebates have grown in popularity because it is generally retailers who decide which products are grouped together in a PC bundle. The goal for the printer manufacturers is to develop a rebate that allows retailers to advertise the bundle at the lowest possible overall price and require the customer to pay the highest possible price at the time of purchase. By doing so, the retailer earns the highest possible amount by selling the PC bundle. Lexmark has excelled at this tactic by developing \$50 rebates. Lexmark offers a \$50 rebate on its Color Jetprinter Z11, which carries a \$99 street price. This allows resellers to advertise a \$49 printer in their PC bundle promotions and charge the customer \$99 for the printer.

Vendors who use direct reseller programs offer resellers money for every PC bundle sold that includes the vendor's printer. The amount ranges from one per cent to two per cent of the total PC bundle price. Canon has found most success using this tactic in the US market, allowing retailers to receive as much as \$8 per PC bundle they sold with a Canon printer.

A Vertical PC bundle includes bundled products only from a single vendor. HP/Compaq is currently the only manufacturer capable of bundling its own desktop PC, monitor, and printer – although Dell recently confirmed that it intends to begin selling its own branded printers in the near future. By doing so, the manufacturer has much more control over the price of the PC bundle and is able to force retailers to stock branded monitors and printers in addition to PC system boxes. Rather than developing a program and hoping that the retailer accepts it, HP/Compaq can force the PC bundle on to retailers.

(Source: ARS)

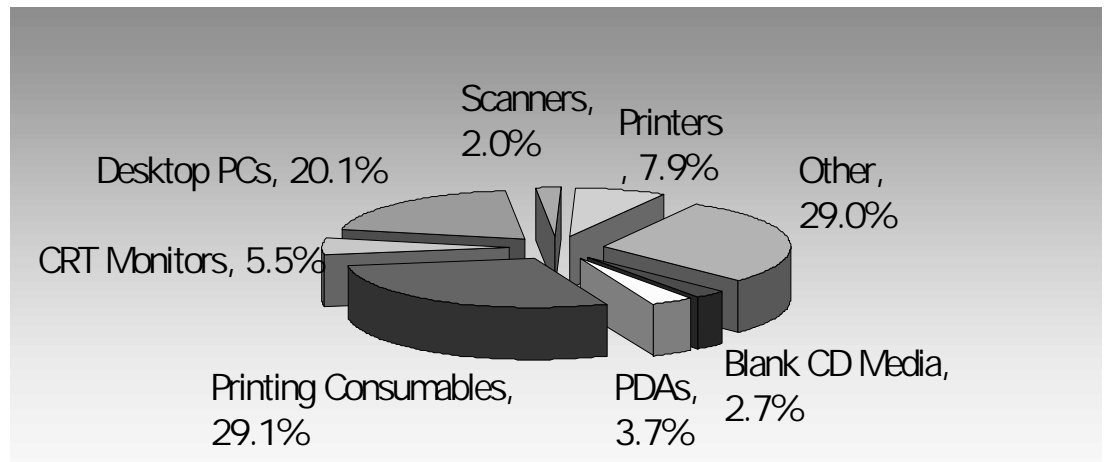
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### The shift to peripherals

- 2.26 In view of ever-tightening margins and falling sales in the consumer PC market, US retailers and manufacturers have shifted their attention away from PCs towards alternative sources of revenue growth.
- 2.27 According to NPD Techworld (2002c), the revenue share from desktop PCs in the \$25.7 billion retail IT market fell from 26 per cent in 2000 to 20 per cent in 2001. There were also significant falls in the revenue shares of 'core' peripherals such as CRT monitors, printer and scanners. In contrast, new peripheral product categories such as LCD monitors, personal digital assistants and CD-RW drives all recorded significant growth in their revenue share. However, the single largest proportion of retail IT revenue – more than 29 per cent - was generated from sales of printing consumables such as ink cartridges, laser toners and specialist printing papers. According to NPD Techworld's figures, the market in printing consumables generated revenues in excess of \$7.47 billion during 2001 on the back of 30 per cent year-on-year growth.

FIGURE 2.5: RETAIL IT REVENUES IN THE US BY COMPUTER PRODUCT CATEGORY, 2001

Source: NPD Techworld



- 2.28 Retailers and manufacturers have aggressively targeted US consumers in recent years in pursuit of the greater revenues afforded by printing consumables. The revenue-generating model employed by printer manufacturers operating in the consumer market focuses on the repeat sale of consumables as opposed to the printer hardware itself. As a consequence, printer manufacturers have engaged in extremely aggressive pricing strategies to encourage consumers to purchase printer hardware. This has led to entry-level prices for colour inkjet printers falling to as low as \$49. According to NPD Techworld, the average price of a

colour inkjet printer has fallen by 32 per cent since the first quarter of 1999 (Non, 2002). Over the same period the average price of inkjet cartridges has risen by 19 per cent.

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## THE MARKET IN PRINTER CARTRIDGES

### **The growth of non-OEM cartridge market**

The cost of inkjet cartridges is certainly an area of concern for US consumers. In the US, retail prices of generic-brand and recycled cartridges are estimated to be 30-50 per cent less than cartridges supplied by OEMs. Consequently, there has been significant growth of suppliers of non-OEM inkjet cartridges. Non-OEM suppliers account for just over 13 per cent of the total inkjet cartridge market in the US. This will grow to 22 per cent by 2005 (Lyra Research).

### **Conflict between OEMs and non-OEMs**

It is worth noting that the big printer makers are making it more difficult for smaller companies to sell generic-brand and remanufactured cartridges. Most significantly, HP and Epson have started putting computer chips into cartridges that render them non-reusable. These so-called 'smart' chips, tell the printer how much ink is left in a cartridge and when the chip reports no more ink, the printer stops until a new cartridge — with a new chip — is inserted. This means non-OEM cartridges will not work. Both HP and Epson say the chips benefit consumers because running a printer on an empty cartridge can damage the printer. They also say the generic ink used by the refillers can be damaging to printers. (Following complaints by remanufacturers, the European Union recently announced an investigation into the competitive practices of big printer makers, including use of these chips.)

Lexmark, the world's number three printer maker, is trying to circumvent the market for third-party recycling of its cartridges by encouraging US consumers to send empty cartridges back to it — as opposed to others. For some printers, it sells two versions of the same ink cartridge. The difference is that the cheaper cartridge (\$30 less than the full priced version) requires that consumers send back the empty cartridge to Lexmark. While Lexmark has suggested its strategy is geared to encouraging greater recycling of its products, the Arizona Cartridge Remanufacturers Association recently filed a suit in California to stop what it says amount to anti-competitive practices.

### **Measuring printer costs**

Calculating how much a printer costs to run is not easy, even when manufacturers quote how many pages can be expected from a cartridge. For example, some manufacturers calculate coverage based on the printable area, rather than the whole A4 page, giving an artificially high page count. Moreover, the 'standard' measures of five per cent coverage for black and white pages and 15 per cent coverage for colour pages are at best arbitrary — and bear little relation to amount of ink used in practice.

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This makes it extremely difficult for consumers to accurately measure the differences in yield/cost quoted in relation, not only to different manufacturers' printers, but also in relation to non-OEM and OEM cartridges for the same printer.

At present, however, there is no recognized standard measure for the performance of inkjet cartridges (and printers). However, in a move to legitimize the use of remanufactured and generic brand cartridges, the International Imaging Technology Council is working with the Standardized Test Method Committee (STMC) to develop standards for cartridge inks. The goal is to ensure that generic-brand and re-manufacturers test inks using STMC guidelines for page yield, image quality, and other factors – and to enable meaningful comparisons between OEM and non-OEM products.

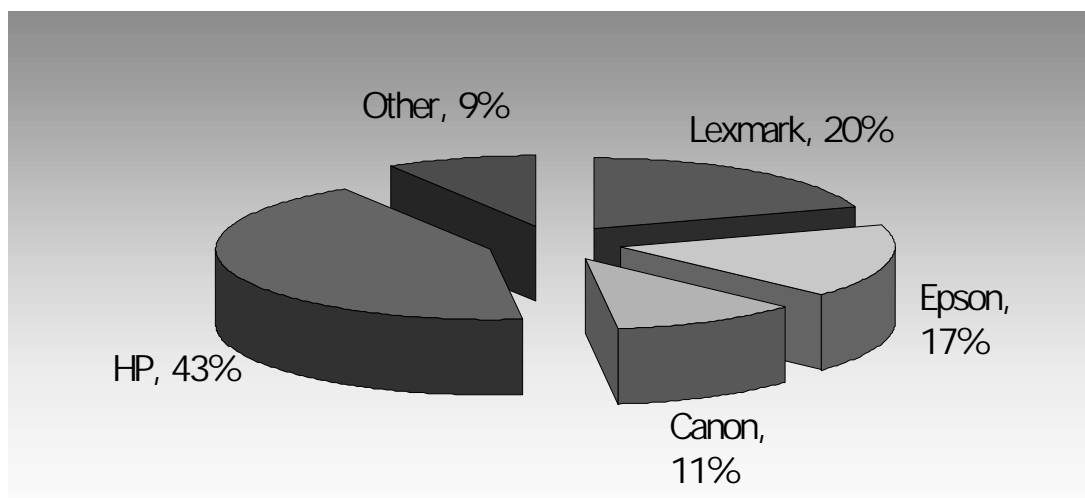
Tests and reviews of inkjet printers conducted by US consumer organisations and publications already measure page yield, image quality, etc. but these tests are based on proprietary measures rather than industry-recognised ones.

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- 2.29 In trying to encourage greater use of printers - and in turn printer consumables - manufacturers and retailers have also targeted digital imaging technologies at the mass consumer market. According to Infotrends (2002), the average price of digital cameras is expected to decrease by 11 per cent from \$378 in 2001 to \$336 in 2002. Moreover, low end digital camera unit sales are expected to reach 9.5 million units in North America in 2002 and are expected to grow at an annual rate of 15 per cent to 18.7 million units by 2007. Increasing use of digital cameras is important for printer manufacturers and retailers because they encourage the use of printers to output photo-quality images which use much more ink than standard output and require specialist photo-quality paper for best results. According to Jennifer Boggs of Hewlett-Packard, the leading printer manufacturer in the US consumer market, the total number of digital images printed worldwide will grow from 2.8 billion in 2002 to eight billion in 2003 (Newsfactor Network, 2002).

FIGURE 2.6: US INKJET PRINTER MARKET SHARE, 2001

Source: IDC



2.30 This would suggest that for those printer manufacturers able to capture a share of the consumer market in photo-quality printers, revenues from consumables will continue to grow significantly. The recent introduction by Epson and HP of six-colour photo-printers with retail prices below \$150 (Stylus Photo 820 and Deskjet 5550 respectively) suggests that the aggressive targeting of US consumers in pursuit of a greater share of revenues from printing consumables will continue.<sup>5</sup> In the face of declining profit margins, extended product lifecycles and market saturation elsewhere in the retail IT market, the attractiveness of the business model developed by leading printer manufacturers cannot be overstated. In this context, Dell's recent announcement that it intends to sell its own brand of printers – rather than those of other manufacturers – is easy to understand.

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<sup>5</sup> Priced above \$300 until recently, six-colour photo-printers offer manufacturers a potentially greater return from the sale of consumables because they use black ink specially designed for high-quality photo paper, along with extra shades of colour ink for making a smoother transition from light to dark.

**TABLE 2.7: TOP 50 PC RETAILERS IN THE UNITED STATES**

Source: Twice magazine

2001 Rank	Store Name	Type	2001 Estimated PC sales in \$ millions	2001 No. of stores	2000 Rank	2000 Estimated PC sales in \$ millions	2000 No. of stores	% change in revenues between 2001 and 2000
1	Best Buy	EA/N	5,273	481	2	\$5,164	411	2.1%
2	Circuit City	EA/N	4,610	631	4	4,062	615	13.5
3	Dell Computer Corporation	CD/I	4,485	0	5	3,902	0	14.9
4	Wal-Mart	MM	4,174	2,713	7	3,657	2,624	14.1
5	CompUS A	CS	3,953	225	3	4,128	224	-4.2
6	Office Depot	HO	3,558	859	6	3,695	850	-3.7
7	Gateway Inc.	CS	3,097	277	1	5,401	327	-42.7
8	Staples	HO	2,353	1,400	8	2,334	1,318	0.8
9	PC Connection	CD/MO	1,122	0	9	1,378	0	-18.6
10	eBay	CD/I	902	0	NR	475	0	89.9
11	Fry's Electronics	EA/N	901	19	12	854	17	5.5
12	Systemax (prior Midwest Micro)	CD/MO	866	0	10	1,001	0	-13.5
13	Micro Warehouse Inc.	CD/MO	821	0	11	869	0	-5.5
14	Electronics Boutique	CS	800	636	13	740	636	8.1

15	Sam's Club	WC	764	500	14	707	475	8.1
16	Micro Center	CS	720	18	17	600	17	20.0
17	Sears	MM	641	867	16	641	863	0.0
18	Costco	WC	595	386	18	544	349	9.4
19	RadioShack	EO/L	418	7,246	20	417	7,199	0.2
20	BUY.COM	CD/I	356	0	15	669	0	-46.8
21	Army & Air Force Exchange Service	MS/PX	342	122	23	304	122	12.5
22	PC Mall (prior IdeaMall)	CD/I	316	1	21	367	1	-13.9
23	OfficeMax Inc.	HO	278	900	22	308	950	-9.7
24	QVC	CD/TV	204	7	25	184	7	10.9
25	Outpost.com	CD/I	193	0	24	256	0	-24.6
26	HPShopping.com	CD/I	186	0	29	156	0	19.2
27	Insight Enterprises	CD/MO	152	0	27	173	0	-12.1
28	J&R Computer World	EA/M	146	1	30	133	1	9.8
29	Target Stores	MM	144	1,053	31	133	977	8.3
31	BJ's Wholesale	WC	115	130	32	126	118	-8.7
32	Zones Inc.	CD/MO	105	0	26	177	0	-40.7
33	H.H. Gregg	EA/R	104	42	39	90	35	15.6
34	CDW Computer Centers	CD/MO	99	2	37	96	2	3.1
35	The Wiz	EO/L	94	43	38	92	42	2.2
36	Fingerhut	CD/MO	87	0	34	114	0	-23.7
37	Datavision Computer Video	CS	86	1	40	86	1	0.0
38	PC Club Inc.	CS	81	35	41	76	29	6.6

39	MicronPC	CD/I	81	0	35	100	0	-19.0
40	PC Warehouse	CS	80	55	36	100	70	-20.0
41	P.C. Richard & Son	EA/M	78	44	42	70	42	11.4
42	Computer Renaissance	CS	75	120	33	120	174	-37.5
43	ABC Appliance Inc.	EA/R	73	39	43	68	38	7.4
44	Apple Computer Retail Stores	EO/L	65	27	NR	0	0	NA
45	RCS Computer Experience	CS	64	3	45	57	3	12.3
46	Navy Exchange Service Command	MS/PX	62	22	44	59	31	5.1
47	American TV & Appliance	HF	58	10	46	53	10	9.4
48	Compu-U-Plus	CD/I	52	0	NR	44	0	18.2
49	Harmony Computers and Electronics	CD/I	51	0	48	49	1	4.1
50	BrandsMart U.S.A.	EA/M	50	5	47	50	4	0.0

NR = Not ranked last year.

NC = Not comparable.

CD/I = Consumer direct/Internet shopping

CD/MO = Consumer direct/Mail order

CS = Computer stores

CD/TV = Consumer direct/TV shopping

EA/M = Electronics/Appliance stores/One-market

EA/N = Electronics/Appliance stores/Multi-regional

EA/R = Electronics/Appliance stores/Regional

EO/L = Electronics-only stores/Chains with five or more stores

HF = Home furnishings stores

HO = Home office stores

MM = Mass merchants

MS/PX = Miscellaneous/Military exchanges

WC = Warehouse clubs

### 3 MEETING THE INFORMATIONAL AND SERVICE NEEDS OF PC CONSUMERS IN THE UNITED STATES

3.1 With this understanding of the US consumer PC market in place, we can now proceed to more accurately appraise the extent to which the informational needs of US consumers are being met. This is the aim of the second part of this report.

#### Pre-sales information

3.2 Recent survey data commissioned by the US Consumer Electronics Association (Brainstorm, 2001) provides a useful snapshot of the regular sources of pre-sales information used by US consumers when purchasing electronic goods (including PC hardware and peripherals). The survey asked US consumers where they acquired information related to product purchases:

'What sources of information do US consumers consult for:

- most of their information before purchasing an electronics product?
- a detailed description or specifications for an electronics product?
- information about pricing for specific products?'

	Product information	Product description	Product pricing
Sales staff at a small speciality electronics store	13%	11%	16%
Sales staff at a large general electronics store	36%	32%	39%
Retailers with online stores and regular stores	28%	21%	46%
Retailers with online stores only	8%	7%	20%
Manufacturer websites	42%	48%	27%
Some other websites	29%	21%	23%
Advertisements	46%	28%	53%
Specialist/trade magazines	24%	19%	14%
Friends/relatives	54%	27%	27%

From the above, it is clear that US consumers rely heavily on pre-sales advice and information from sales staff in large electronics stores. Moreover, product advertising remains a key source of both general and pricing information for US consumers. However, what is also apparent from this survey is that online sources have become a key point of reference for US consumers seeking product information and an increasingly important tool with which to find (comparative) pricing information.

### Point of purchase information

3.3 A recent mystery shopping exercise conducted by *PC World* magazine of leading US retailers – including electrical superstores, direct-sell manufacturers and online retailers – offers useful insights into the current state of point of purchase information provided to PC consumers. It found that:

- phone- and web-based direct-sell manufacturers offer the highest quality point of purchase information in the retail PC market
- the quality of point of purchase information in retail stores is variable – ranging from excellent to 'pathetic' (even within the same store)
- staff at some leading electrical retailers are particularly aggressive in their attempts to persuade PC consumers to purchase extended warranties
- the quality of point of purchase information provided by office supplies retailers was generally poor
- innovations in web-based retailing, such real-time chat with sales staff (Gateway and HP) and online buyers' guides (Dell), continue to enhance the quality of point of sales information for consumers purchasing PCs online
- while retail stores are uniquely placed to allow consumers to test PC products prior to purchase, many fail to make the most of this advantage - often limiting the functionality of in-store display models
- all of the leading retail stores have sought to duplicate the benefits of purchasing online through the provision of web-based kiosks at which customers can configure systems and have them delivered directly.

3.4 These results indicate that the sources of point of purchase information available to US consumers have multiplied considerably in recent years as the impact of (and investment in) direct retail channels has grown. They also suggest that the key advantage of retail stores – the added value of face-to-

face sales advice, particularly for inexperienced consumers - has declined in relevance as increasing numbers of consumers have become experienced in the purchase of home PCs and more confident in using direct channels to make those purchases. Retail analyst ARS argues that this is the inevitable consequence of the transformation of the PC into a low-service commodity item for which the high-service retail model of traditional retail stores is increasingly ill-suited (ARS, 2000).

### **After sales information and service**

- 3.5 The default after sales service provision for consumer PCs bought in the United States consists of a one-year manufacturer's warranty covering basic technical support and the costs of labor and parts required to repair defective systems. None of the leading manufacturers of consumer PCs offer on-site warranties as standard and require that defective machines be returned direct to a local service centre. This arrangement applies whether PCs have been purchased direct or through a retail or online store. The liability of retail and online stores for repair or replacement of defective PCs in this arrangement is normally limited to a period of 30 days after the original date of purchase. Thereafter, all responsibilities for repair and technical support are assumed by the manufacturer.
- 3.6 However, faced with declining margins, manufacturers have in recent years aggressively targeted the cost-base of their repair and technical support operations. A primary means of cutting support costs has been to shift front-line technical support away from call centre operations to the internet. All of the leading PC manufacturers serving the US consumer market have chosen this route for front-line support using websites, email and live chat as their preferred tools with which to deal with technical support and repair issues. For example, Dell now aims to deal with 80 per cent of all support transactions solely through its online support website support.dell.com (*PC World (US)*, January 2001). Phone-base support is still provided by all manufacturers but these are often national-rated (rather than local-rated) calls and are increasingly associated with long hold times (see below).
- 3.7 Beyond these basic provisions, US consumers are offered a range of enhanced and extended support and service options under extended warranty programmes provided by manufacturers and retailers at extra cost. For example, direct-sell manufacturers such as Dell and Gateway offer customers the opportunity to upgrade their standard warranties to on-site for periods ranging from one to three years.

- 3.8 While the extended support options offered by PC manufacturers are still largely tailored to the needs of business customers, a much wider range of added value support services focused more clearly on the needs of consumers are provided by US retailers. Amongst the enhanced support services currently being offered at extra cost by leading PC retailers are: extended in-store or on-site repair service; toll-free technical helplines; online support tools, classroom-based and online training programmes for software and hardware; drop-off repair services for peripherals; product replacement services for peripherals; laptop screen replacement service; international cover for PCs and peripherals and coverage for out-of-warranty items. These enhanced support products can be purchased individually or in packages oriented to the needs of different types of consumer.
- 3.9 Given that sales of extended warranties account for a major proportion of marginal profit generated by PC sales, retailers have sought, not only to expand the range of support product they offer, but also the market for them. A recent development in the consumer PC market in the US has been the introduction of extended warranties by online retailers. Online retailers including Best Buy, CompUSA, Staples, and Radio Shack, now enable consumers to obtain extended warranties on PCs and related products at the point of purchase. A number of specialist warranty companies such as Warranty.net and Assurant serve this growing market enabling retailers to dynamically feed the appropriate extended warranty/service plan into the 'buy' or 'add to cart' section of any product page (Reda, 2002).

### **Sources of consumer complaint and dissatisfaction**

- 3.10 This part of the report considers the main sources of consumer dissatisfaction in the US consumer PC market.

#### **Technical support**

- 3.11 Recent large-scale surveys of PC consumers in the US, suggest that the quality of technical support offered by PC manufacturers declined significantly during 2001. As noted earlier, faced with unprecedented pressures on retail margins, PC manufacturers have sought to reduce the cost base of their technical support operations. It appears that, as a result, the technical support that consumers receive is getting worse.
- 3.12 According to survey data from *Consumer Reports*, the US equivalent of *Which?*, levels of consumer satisfaction with technical support provided by leading PC manufactures have shown a year-on-year decline since 2000. In the first quarter

of 2000, just over 50 per cent of those consumers who had used manufacturers' technical support were 'highly satisfied' with the service they encountered (Consumer Reports, 2001a). By the second quarter of 2002, this figure had fallen to just over 40 per cent. With the exception of Apple, levels of consumer satisfaction have declined in respect of the technical support provided by all of the leading manufactures serving the consumer PC market in the US (Consumer Reports Online, 2002a).

3.13 The recent decline in levels of consumer satisfaction with technical support services is further confirmed by two large-scale surveys (of 27,000 PC consumers) conducted by *PC World* magazine. These surveys confirm declining levels of satisfaction with the technical support offered by all leading PC manufactures. They also suggest that the decline is a general one rather than specific to any particular aspect of technical support.

TABLE 3.1: DECLINING QUALITY OF HOME PC TECHNICAL SUPPORT

Source: PC world

	January 2001	November 2001
<b>Short hold time</b>		
Percentage of phone service recipients who waited on hold for five minutes or less.	53	50
<b>Quick resolution</b>		
Percentage of service recipients whose most recent problem was resolved in five days or less.	66	61
<b>No resolution</b>		
Percentage of service recipients whose most recent problem was never resolved.	9	11
<b>Knowledgeable tech support</b>		
Percentage of service recipients rating the knowledge of the technician who helped them as excellent or good.	72	74
<b>Sincere effort by tech support</b>		
Percentage of service recipients rating the sincere effort of the technician who helped them as excellent or good.	76	75
<b>High satisfaction with service</b>		
Percentage of service recipients who indicated that they were very satisfied with the service they received.	46	43

### Reliability

3.14 Recent surveys also suggest that, while the reliability of consumer PCs has not declined significantly, reliability issues continue to be a key source of concern for PC consumers. According to another recent survey by *Consumer Reports*, five per cent of consumers bought a computer that was completely inoperable within the first month, while another 11 per cent had experienced some form of hardware failure but their PC remained usable (Consumer Reports, 2001b).

These figures are consistent with the results of past surveys conducted by *Consumer Reports* over recent years. Previously, *Consumer Reports* estimated that of the near 16 million desktop PCs sold in 1999, 2.5 million had serious problems within the first month of ownership, with some 800,000 of these totally inoperable at set-up. Moreover, *Consumer Reports* estimated that in the case of some 240,000 desktop PCs sold in 1999, owners had to replace three or more components during the PC's first 16 months of life (Consumer Reports Online, 2002b).

- 3.15 Concerns about PC reliability are again confirmed by the results of the two *PC World* surveys referred to earlier. These also suggest that a significant proportion of consumers suffer problems with their PCs at set-up. They also show that less than two-thirds of consumers are very satisfied with the reliability of their PCs.

TABLE 3.2: RELIABILITY OF HOME PCs

Source: PC World

	January 2001	November 2001
<b>Percentage of PCs with problems</b>		
Percentage of PCs that have had at least one problem needing repair.	56	53
<b>Problems per year</b>		
Average number of problems per year of age, for the brand's PCs.	1.7	1.1
<b>Problems on arrival</b>		
Percentage of PCs that did not work properly when they were first turned on.	7.3	7.1
<b>Dead on arrival</b>		
Percentage of PCs that were non-functional when they were first turned on.	1.8	2.1
<b>Component failure</b>		
Percentage of PCs that have had at least one faulty component replaced.	31	30
<b>High satisfaction with reliability</b>		
Percentage of respondents who indicated they were very satisfied with their PC's reliability.	64	61

### Repair services

- 3.16 The quality of repair services, particularly those offered by retail stores, is a further source of concern amongst US consumers. The results of recent tests conducted by *PC World* magazine of the repair services offered by a variety of US retailers, are instructive of the sorts of problems consumers face. The test

covered 18 retailers – 12 branches of leading retail chains (with 1,200 outlets nationwide) and six specialist independents – each presented with a common set of PC faults. It found that:

- of 31 total problems posed across the 18 stores, 18 were misdiagnosed or left unresolved
- in eight of the 18 stores, staff advised the need to replace perfectly good parts. The average cost for these unnecessary repair was \$340
- in only three instances did technical staff who misdiagnosed the original fault eventually catch their mistake
- five of the six specialist independents failed to correctly diagnose faults and two-thirds (incorrectly) suggested the need for a new motherboard or a new system
- turnaround times ranged from 48 hours to 36 days
- only six of the 13 stores that offered tech support by phone – typically charged at \$25 per incident - provided effective advice about how to repair faults.

#### **Extended warranties**

- 3.17 Consumer dissatisfaction about extended warranties is particularly focused on the perception that PC retailers and manufacturers often misrepresent the services provided for by these products.
- 3.18 In respect of 'next business day, on-site' service, for example, delays in sending out technicians are commonplace. Under the terms of most on-site warranties technicians are only sent out at the discretion of frontline support staff. This can often mean extensive delays as customers are required to carry out lengthy diagnostic procedures in order to determine that on-site assistance is absolutely necessary.
- 3.19 Likewise, when a replacement part is required, the guarantee of 'next business day' service often only applies if that part is in stock. As a result, the failure of a manufacturer or retailer to stock basic parts can result in 'next business day' service effectively being suspended. Delays in providing on-site support are not uncommon. Of respondents to a recent *PC World* survey who received on-site service, nearly 30 per cent waited three days or more for a technician to arrive (Kandra, 2001).

3.20 The way in which extended warranties are represented to consumers at the point of purchase is also a significant source of complaint in the US – and (as in Europe) concern centres on the largest consumer electronics retail chains. In 2000, the Florida attorney general investigated Best Buy - the largest consumer electronics retailer in the US – in relation to deceptive practices employed in the sale of extended warranties. This followed complaints by consumers that Best Buy sales staff had overstated the provisions of its in-store warranty programme while denigrating perfectly suitable product warranties offered by manufacturers as standard. A parallel investigation by CBS News' *48 Hours* confirmed that Best Buy staff in Florida had knowingly misrepresented the cover offered by in-store warranties. A common example of how this was done was to tell customers that extended warranty coverage on PCs would cover any type of technical fault that might arise – when, in fact, Best Buy's PC warranties explicitly exclude coverage for software faults (the most common fault that afflicts PCs). In this case, Best Buy did not admit to any wrongdoing but did agree to take steps to prevent deceptive practices in the future (CBS News, 2000).

## 4 INITIATIVES: ADDRESSING SOURCES OF CONSUMER DISSATISFACTION AND COMPLAINT

- 4.1 Given evidence of saturation in the US consumer PC market, we should not be surprised that the sources of complaint and dissatisfaction highlighted above are predominantly related to the after sales, rather than pre-sales or point of purchase, environment. As US consumers have become more experienced and knowledgeable in the use and purchase of PCs, so information deficits that might have prevailed prior to (or at the point of) purchase have largely been overcome.
- 4.2 As this report has suggested, problems in the US consumer PC market are almost exclusively associated with after sales issues – support, reliability, repair and warranty cover. The final part of the report highlights some recent initiatives that attempt to address these issues.

### Lemon laws

- 4.3 As noted earlier, significant numbers of PC consumers have experienced problems with the reliability of systems at set-up or within the first month after purchase. When this happens, PC manufacturers tend to shift responsibility for warranty work onto the consumer, who is often required to replace parts, alter software, and otherwise serve as the unpaid, unskilled hands of technical support services. If problems are still not fixed after these efforts, consumers are often required to do more work shipping or hand-delivering the problem system to a repair technician.
- 4.4 In response, a recent initiative supported by the US Consumers' Union and a number of state legislatures has sought to shift the responsibility for warranty work away from the consumer onto manufacturers. During 2001, state legislatures in both Pennsylvania and Illinois introduced bills intended to create the first so-called PC 'lemon laws.'
- 4.5 The bills would standardize guidelines for repair of defective PCs and other computer-related electronic devices sold in each state and would give consumers a statutory right to a refund if the manufacturer fails to fix the machine after two attempts. The bills are an improvement over the original car-industry 'lemon laws' they are derived from because they would require refund or replacement after only two (vs. four) unsuccessful repair attempts and do not require that both attempts be for repair of the same defect, only that the defects make the PC 'operate in a manner not intended.'

- 4.6 While both bills failed on their first introduction, they have both been reintroduced for consideration in the current legislative session. In the meantime, the Federal Trade Commission has expressed an interest in using the Pennsylvania bill as a model for federal legislation.
- 4.7 Most PC manufacturers believe that existing laws and warranties do a satisfactory job of protecting consumers and handling service and repair needs. They also argue that manufacturers regularly make good-faith efforts to resolve problems - through telephone support, on-site technician visits, and more. Despite this and in recognition of the growing support for lemon laws amongst consumers, a number of manufacturers and retailers have introduced more limited 'no lemon' clauses into their extended warranty products.

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## THE PENNSYLVANIA AND ILLINOIS LEMON LAW PROPOSALS

The bills protect individuals and businesses with fewer than 30 computer workstations that leased, bought, or received a computer as a gift. They apply to the central processing unit, monitors, printers, connective devices, modems, scanners and other devices, as well as to any programming for a computer, whether pre-installed or purchased separately (Illinois HB 1046 and Pennsylvania HB 1052).

### **Consumer rights**

The bills require anyone who purchases a computer to receive a statement of his/her lemon law rights at the time of sale. The amended Illinois bill states that the statement must be provided by the manufacturer. Both bills require a computer manufacturer to obtain a signed acknowledgment from each purchaser indicating that he had seen and understood his rights. Unless a manufacturer secures a signed acknowledgement, the time limits to file a claim are tolled. A manufacturer is also required to disclose to consumers at the time of sale the names of all software likely to cause operating problems and has the burden of proving it has made such disclosures in any claim brought under the bill.

### **Right to repair**

The bills entitle consumers to free repair of any nonconformity occurring within 24 months after the manufacturer obtained the consumer's signed acknowledgement of his rights. A "nonconformity" is defined as any defect, condition, or malfunction that impairs the use of a computer device or causes it to operate in an unintended way. If the manufacturer has issued a warranty or service contract, the coverage period must be the greater of 24 months or the

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term specified in the warranty or service contract.

The bills require a manufacturer to repair and return any computer to the buyer within five business days, plus a reasonable time for shipping, which cannot be more than three days. Free repairs must be made on-site if provided for in the warranty. Repairs made by the consumer at the manufacturer's direction are considered to be conducted by the manufacturer. If repairs are not made on-site, the manufacturer must arrange and pay for shipping. Repairs are guaranteed for two years.

If the first repair is ineffective, the bills give manufacturers a second chance to repair on-site. The repair must be completed within three business days. The bill prohibits manufacturers from requiring the consumer to ship the computer back to the manufacturer for its final opportunity to repair.

#### **Right to refund or replacement**

If the second repair is either ineffective or not timely, the bills give a purchaser the right to either a full refund or a new computer of equal or greater value.

If more than one problem with the original computer has been subject to repair under the bill, a purchaser is entitled to a refund or a new computer after only one repair attempt.

#### **Return of the computer**

If a manufacturer replaces a computer or refunds its purchase price, the bills authorize it to ask the consumer to return the original computer at cost.

#### **Prohibition against reselling a lemon personal computer**

No computer returned to the manufacturer may be resold in the respective states. If this provision is violated, a person who buys the resold computer is entitled to the remedies available of the state's unfair trade practices act and to damages equal to triple the purchase price.

#### **Records**

The bills require a manufacturer to keep records of all contacts and communications between itself and a consumer and to keep a list, arranged by serial number, of all refunds and replacements made under the bill. Copies must be provided to a consumer on demand, regardless of whether a manufacturer uses a third party to manage consumer claims.

#### **Civil actions**

In both states, a violation is an unfair trade practice.

In addition to a refund or replacement, the bills allow a consumer to sue for

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damages equal to three times the purchase price if a manufacturer fails to honor warranty terms or fails to keep records of all consumer contacts and provide copies on request.

Under both bills, a prevailing purchaser may receive up to \$ 6,000 in damages from the trial court. In Pennsylvania, small claims and other courts may award lesser amounts in damages.

The bills require a manufacturer to produce a corporate witness who is aware of the facts and circumstances of the case at every court proceeding and allow manufacturers to assert relevant defenses. A nonconformity caused by software is not allowed as a defense if the software was pre-installed by the manufacturer except if (1) the manufacturer produces an expert who states the cause of the problem and a way to fix it, and (2) the manufacturer had strictly complied with the bill's software notice provisions.

Under both bills, consumers may not be required to produce experts. If a purchaser prevails, the manufacturer must pay reasonable attorney's fees and costs, as well as any expert expenses.

(Source: Connecticut General Assembly Office of Legislative Research)

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## Replacement warranties

- 4.8 In addition to proposed changes to the protection afforded to PC consumers under legislation, there have been important innovations in warranty provision that have been market-driven. As consumer perceptions of electronics goods as commodity items have taken hold, so extended warranty providers have increasingly shifted the emphasis of warranty protection away from the traditional model based on repair of faulty goods to a model based on automatic replacement. Effectively, such warranty coverage provides for the automatic replacement of defective products. Warrantech's Xchange Card is another example of this trend. Introduced in 2000, the programme allows consumers to buy replacement coverage for products priced between \$50 and \$500.
- 4.9 While there is no immediate prospect of replacement warranties being extended to PC systems themselves, they have become increasingly popular options for coverage of PC-related peripherals such as printers, modems and scanners.

4.10 Many warranty providers believe that the replacement approach is a crucial way to prove to consumers that they are getting value for money and equally importantly to overcome the unfavorable reputation amongst consumers of extended warranty products.

### Consumer advice guide

4.11 In the light of growing concerns about the reliability of home PCs and the difficulties that consumers face in trying to bring remedial action to bear on retailers and manufacturers when their PCs are defective, the US Consumers' Union has recently introduced an online step-by-step guide to its four million members providing advice, strategy, information, and tools required to gain satisfactory resolution to problems associated with defective PCs. The guide consists of:

- An **action plan** which lays out the most efficient and effective step-by-step procedures consumers should follow to get retailers and manufacturers to fix their problem.
- An **action library** which provides crucial information consumers need to argue their case in a professional manner. This includes a range of information including the latest news about recalls that could be the source of technical problems; *Consumer Reports Online* product reports and ratings; links to the text of applicable consumer-protection laws; and an extensive troubleshooting guide.
- An **action communication centre** providing names and numbers of PC manufacturers and retailers; links to outside information resources; and preformatted letter templates that consumers can copy, paste, and customise to demand action, get outside help, and file consumer complaints.

## 5 CONCLUSION

- 5.1 The evidence presented in this report suggests that the consumer PC market in the US has changed significantly in recent years. While high rates of PC penetration across all groups have given rise to a much more experienced and knowledgeable base of consumers, they have also helped to transform the perception of PCs from a specialist high-technology product to one better understood as a commodity product more akin to mainstream consumer electronics items such as VCRs and televisions. As the report has attempted to show this has had an enormous bearing on the structure and operation of the consumer PC market. Low-margins are now an entrenched feature of the market and aggressive pricing has become the norm. A predictable consequence in these conditions has been ongoing consolidation amongst retailers and manufacturers serving PC consumers.
- 5.2 At the same time, however, the growing experience of PC consumers, as evidenced by the numbers purchasing replacement and additional systems, has extended the choice of retail channel through which to make their PC purchases. This is made clear by the substantial growth recently witnessed in the use by PC consumers of online and direct channels.
- 5.3 As this report has argued, these changes have also impacted upon the sources of consumer complaint and dissatisfaction that prevail in the PC market in the US. In a saturated market like the US, problems faced by consumers tend not to be those associated with making PC purchases but ensuring that those purchases are reliable and effectively supported when they go wrong. In other words, after sales service provision is now the paramount concern of PC consumers in the US.
- 5.4 The report has also pointed to a number of recent initiatives that attempt to address some of the issues surrounding the above concerns. The initiatives highlighted remain among the few examples of current attempts seeking to address sources of consumer complaint and dissatisfaction. In part, this can be explained by the approach US regulators have traditionally taken to issues of consumer detriment: namely, to allow for the market itself to develop the institutions, policies and practices required for resolution of such issues.
- 5.5 We believe that many of the issues discussed in this report will become increasingly pertinent to a number of consumer PC markets in Europe – particularly those with high rates of consumer PC penetration and/or those reaching levels of market saturation. The sorts of competitive pressures witnessed in the United States and the consolidation of retailers and manufacturers that follow from them will almost certainly become issues that regulators will be required to monitor – particularly if such consolidation results in the misuse of market position to the detriment of consumers.

# ANNEXE

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