

SOJ manufacturing costs and prices

1. SOE provided us with a detailed submission on SOJ's manufacturing costs and prices, to demonstrate how SOJ's selling prices were determined and the effect those prices had on profits. Its figures are based on average costs and standard FOB selling prices, excluding the discounts and marketing support credits which were given on a game-by-game basis both to third party publishers and SOE.

2. In the remainder of this appendix, FOB selling prices (including transfer prices to SOE), manufacturing costs and gross profits are shown for a number of SOJ's hardware and software products. It should be borne in mind that SOJ incurs other costs which have to be deducted in any calculation of its overall operating profits. In paragraph 11 we comment on the profitability of sales of cartridges to third party publishers, as calculated by SOJ, and in paragraph 14 we comment on the profits to SOJ from games sold to SOE at 1993/94 transfer prices.

Hardware costs and prices

3. Tables 1 and 2 set out SOJ's costs and its transfer prices to SOE of two Sega consoles, the Master System and the Mega Drive.

TABLE 1 SOJ: Master System costs and transfer prices to SOE

	¥		
	1991/92	1992/93	1993/94
Components	[]
Manufacturing			
Direct cost			
Overhead			
Total costs		<i>Figures omitted.</i>	
Gross profit		<i>See note on page iv.</i>	
FOB to SOE			
¥:£ rate*]
			£
FOB to SOE	[†]
			<i>per cent</i>
Gross margin	[†]

Source: SOE.

*Average exchange rate for years ending 31 March.

TABLE 2 SOJ: Mega Drive costs and transfer prices to SOE

	¥		
	1991/92	1992/93	1993/94
Components	[
Manufacturing			
Direct cost			
Overhead			
Total costs		<i>Figures omitted.</i>	
Gross profit		<i>See note on page iv.</i>	
FOB to SOE			
¥:£ rate*]
			£
FOB to SOE	[†]
			<i>per cent</i>
Gross margin	[†]

Source: SOE.

*Average exchange rate for years ending 31 March.

4. SOE told us that SOJ had consistently reduced costs at each stage of the manufacturing process, resulting in lower transfer prices (in terms of ¥) to SOE. On the other hand Tables 1 and 2 show how the appreciation of the Yen more than offset these reductions of the transfer prices so that the cost of consoles to SOE rose in 1993/94. At the same time, according to SOE, competitive pressures reduced its selling prices so that its margins on hardware were reduced, as indicated in Appendix 6.1.

5. Tables 1 and 2 show that components made up by far the largest part of the costs of both the Master System and the Mega Drive. Although the tables included a small overhead allocation, this related principally to SOJ's manufacturing operation. In particular, there was no charge for R&D. SOE told us that through a system of departmental allocations 50 per cent of R&D costs relating to hardware were taken 'below the line' and were excluded from the calculations of gross profit in Tables 1 and 2. The other 50 per cent was allocated to cartridge manufacture.

Software costs, prices and profits

Direct costs

6. Table 3 shows that the greatest part of SOJ's direct cartridge costs was the purchase price of the Mask ROM chip. The remaining direct costs consisted of other components (printed circuit board, manual, packaging, artwork, screws, capacitors, etc) and assembly.

TABLE 3 SOJ: direct costs per cartridge, 1993/94

	¥		
	<i>Meg size</i>		
	8	16	24
Mask ROM	[
Printed circuit board			
Other and assembly		†	
Total direct costs]

Source: SOE.

Note: ROM prices were originally quoted by SOJ in US\$ and were converted at \$1 = ¥100.

7. [

Details omitted. See note on page iv.

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TABLE 4 SOJ: overhead costs per cartridge 1993/94

	¥	
	Third party	Sega
Patent payments	[
Administration for R&D and manufacturing		
Hardware development		<i>Figures omitted.</i>
Hardware marketing		<i>See note on</i>
Overseas Consumer Products department		<i>page iv.</i>
Total overheads]

Source: SOE.

8. SOE explained that SOJ had to make patent payments for licensed-in technology. Some of these arrangements, including settlements of lawsuits, provided for lump sum payments which were then charged to cartridge manufacture in the year in which these payments were made, with no amounts carried forward to future years. In 1993/94 there were no such payments, but in 1994/95 cartridge costs would be increased as a result of the settlement with Atari (described in paragraph 6.68).

9. SOE also gave us a breakdown of SOJ's administration charge for R&D and manufacturing, which is set out in Table 5.

TABLE 5 SOJ: administration charge per cartridge for R&D and manufacturing, 1993/94

	¥	
	Third party	Sega
R&D-software*	[
Design		<i>Figures omitted.</i>
R&D-software support		<i>See note on</i>
Software manufacturing overhead		<i>page iv.</i>
Head office administration]

Source: SOE.

[*Details omitted. See note on page iv.*]

10. SOE told us that SOJ allocated 50 per cent of its hardware development and hardware marketing expenses to its cartridge manufacturing operation, because software sales were dependent on prior sales of hardware and should therefore bear a portion of these hardware-related costs.

Profitability of cartridge sales to third parties

11. In Table 6 costs from the preceding tables for 8- and 16-Mbit cartridges are aggregated to give total manufacturing costs and gross profits for each cartridge size when sold to third parties.

TABLE 6 SOJ: profitability of third party cartridge sales, 1993/94

	¥	
	ROM size (Mbit)	
	8	16
Direct costs	[
Overhead costs] <i>Figures omitted.</i>	
Manufacturing cost] <i>See note on</i>	
Gross profit] <i>page iv.</i>	
Average sales price*]	
	per cent	
Gross margin	[†]

Source: SOE.

*Includes notional royalty of ¥[†].

12. [

Details omitted. See note on page iv.

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Profitability of SOJ's sales to SOE

13. SOE also gave us a detailed calculation of the profitability of the games purchased by it from SOJ in 1993/94, which is set out in Table 7. These cartridges carry Sega's own games and the average development cost of a game of the appropriate ROM size has been added to the manufacturing cost. The development cost of the 24-Mbit games appears to be unusually high because only one game of this size was published during the year.

TABLE 7 SOJ: profitability of games sold to SOE, 1993/94

	¥		
	ROM size (Mbit)		
	8	16	24
Direct costs	[
Overhead costs] <i>Figures omitted.</i>		
Manufacturing cost] <i>See note on page iv.</i>		
Development cost]		
Total cost]		
Operating profit]		
Transfer price to SOE]		
	per cent		
Operating profit: transfer price	[†]

Source: Sega.

14. Tables 6 and 7 show that for 8- and 16-Mbit cartridges transfer prices to SOE in 1993/94 were little different from the selling price to third parties. The former had a game installed (thus reducing SOJ's margin in Japan) while the third party had to pay separately for developing a game. The result would be that, other things being equal, SOE would have a cost advantage over third party publishers in the European market and should therefore have higher margins on software sales.

15. SOE told us that it was arranging manufacture of cartridges for the European market through subcontractors in the UK, using components imported from Japan. The total costs and selling prices of these cartridges were higher, but third party publishers benefited from shorter lead times; they were still able to order cheaper cartridges from SOJ if they were prepared to accept the longer lead times for overseas supplies. All Sega's Mega CD games for distribution by SOE were now manufactured in the UK.

Overall profitability of Sega

16. SOE told us that it expected Sega's profits on software to decline in 1994/95 due to:

- (a) the introduction of a progressive discount structure for third party publishers, with larger discounts for higher cumulative purchases;
- (b) an increase in self-manufacturing by the largest third party publishers; and
- (c) a significant fall in software sales volumes.

17. The tables in this appendix do not show all of the Sega results from hardware and software, but only those of SOJ. We have not been able to review SOJ's management accounts nor to reconcile them to their published accounts, and we cannot therefore ensure that all relevant costs have been included. Furthermore SOE's UK profits, which are set out in Appendix 6.1, should also be taken into consideration. However, SOE pointed to the results of SOJ's video games business which are reported separately from those of its other businesses in a note to its consolidated accounts. These results are set out in Table 6.10 and show a sharp fall in profitability in 1993/94.