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Xerox joins the fast A4 mono workgroup laser printer brigade

Although there are hundreds of mono laser printers on the market, when it comes to fast black and white printing in an A4 printing format for the office, there are relatively few manufacturers that offer a solution.

Of those that do, two manufacturers currently have two offerings, at 43ppm and at either 47ppm or 52ppm. It is Lexmark that has 43ppm and 47ppm from its T642 and T644 while Hewlett-Packard offers 43ppm and 52ppm from its LaserJet 4250 and 4350 respectively.

Joining these two manufacturers are only Dell (with its Lexmark-built solutions) with a 47ppm printer, Kyocera Mita with its FS-4000 running at 45ppm and Xerox with a new model, the Phaser 4510, rated at 43ppm.

Stop Press: Ricoh has, today, announced a new 45ppm mono laser printer (Aficio SP5100N) in the Americas. This is Ricoh's fastest A4 mono laser printer but insufficient information is available at this time to include it in this comparative line-up. There does not appear to be anything particularly remarkable or noteworthy about this printer except to confirm that it is duplex ready as standard. Perhaps the most noteworthy feature is that it is competitively priced at \$1,199.

Newly announced
Ricoh SP 5100N
(Americas)



Xerox's new model holds significant benefits to the user in relation to its predecessor, the Phaser 4500, even though it is based on the same print engine.

This includes a speed increase from 35ppm to 43ppm but one of the most significant benefits is an 18% price decrease between the two models from £819 for the Phaser 4500 down to just £670 for the base model Phaser 4510.

And, this is not all. There is a significant price reduction on consumables and maintenance kit as well. We see a 5% reduction on the standard toner, 6% reduction on the high capacity toner and a massive 34% reduction in the cost of the maintenance kit.

In the long run, over three years printing 10,000 pages per month, these price adjustments make a healthy 16% reduction to the Total Cost of Printing. For lower print volumes, say 5,000 pages per month, the overall cost reduction is actually higher at 18.6%.

Unfortunately this doesn't make it the least expensive machine in the class to run, be any stretch of the imagination. In fact, the reductions do little more than keep pace with the competition.

Comparing the Duplex / Twin paper tray / Network versions of each model in the fast A4 mono laser printer class (40ppm and upwards), amongst the 43ppm printers the Phaser 4510N (+D +T) competes very closely with Hewlett-Packard's LaserJet 4250dtn but does not quite undercut it. It does, however, look very much more attractive (with its 1.17 pence long term CPP) than Lexmark's T642dtn at 1.4 pence.

As we move up the speed scale, we see the 47ppm model from Lexmark showing a lower long term CPP than the 43ppm model - exclusively because it accepts extra-high capacity toner cartridges instead of the regular high capacity cartridges.



Xerox Phaser 6360DN

This involves a shift from 21,000 pages per cartridge to 32,000 pages. Dell also has a 47ppm

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model based on the same engine but that is limited to 30,000 pages from each extra-high capacity cartridge. Its regular high capacity cartridges are also of lower yield than Lexmark's, at 20,000 pages.

Lexmark T642 / T644 dtn



Typically high on Cost of Printing, Lexmark's figure of 1.12 pence here only just undercuts the 43ppm models from Hewlett-Packard and Xerox - which both have

rather lower capacity toners (20,000 from Hewlett-Packard and 19,000 from Xerox).

Dell is typically low on its Cost of Printing in comparison to Lexmark (RRP). Here we see an 18% disparity bringing a long-term CPP of less than a penny (0.92 pence).

Not even this can match the low CPP from Kyocera Mita though. At just 0.69 pence per page printed over three years (10,000 pages per month) from this 45ppm machine, Kyocera Mita beats the competition by as much as 51%! Even against the Dell 5310, it comes in with a 25% advantage.

One of the remarkable points we notice here is that the Kyocera Mita FS-4000DN

(+T) has a hardware purchase price that is not the highest in the group by a large margin and is actually undercut only by the Dell 5310n (+D +T) and Lexmark's T642dtn.



Kyocera Mita FS-4000DN

This means that the historical barrier (high hardware purchase price) preventing printer users adopting Kyocera Mita as a low cost, low entry solution no longer exists. We can see clearly that it is now possible to buy a Kyocera Mita printer at a price low down the competitive scale - and then benefit from the low-cost ECOSYS engine design that gives the lowest toner prices and Cost of Printing on the market.

At the top end of the high-speed class, Hewlett-Packard's LaserJet 4350dtn offers us the fastest print speed on the market (52ppm) at a correspondingly higher hardware price. However, with a nominal CPP at the same level as the LaserJet 4250dtn (0.71 pence), the long term Cost of Printing of the LaserJet 4350dtn still falls significantly below the level of the 43ppm Lexmark T642dtn!

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UK - Mono	Purchase / Duty Cycle	Print Speed	Nominal CPP	Long-term CPP over 3 years
Lexmark T642dtn	£914 225,000	43ppm	1.10 pence	1.40 pence
Xerox Phaser 4510n (+D +T)	£1,172 200,000	43ppm	0.81 pence	1.17 pence
Hewlett-Packard LaserJet 4250dtn	£1,319 200,000	43ppm	0.71 pence	1.14 pence
Kyocera Mita FS-4000DN (+T)	£1,026 250,000	45ppm	0.30 pence	0.69 pence
Lexmark T644dtn	£1,099 250,000	47ppm	0.78 pence	1.12 pence
Dell Workgroup Laser 5310n (+D +T)	£906 250,000	47ppm	0.63 pence	0.92 pence
Hewlett-Packard LaserJet 4350dtn	£1,645 250,000	52ppm	0.71 pence	1.23 pence

Note that for this group of printers, the long-term Cost of Printing over three years shown in the accompanying table is calculated on the basis of 10,000 pages per month; is based on the use of maximum capacity supplies; takes into account any standard, or starter, supplies shipped with the device; and also includes the cost of purchase. All prices are manufacturer's recommended prices without tax.



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To focus on the newcomer to the class, the Xerox Phaser 4510, we find a competent, highly specified machine.

Even though the print speed is at the lower end of the scale within this class, Xerox claims that it will maintain that 43ppm even at full resolution (1200dpi) – when printing at high resolutions, many printers slow down so that the engine speed does not run ahead of the data handling process.



Dell Workgroup Laser Printer 5310n

This success is partly down to the use of a 533MHz processor in comparison to processors ranging from 514MHz in Lexmark's T644 and Dell's 5310 down to the 460MHz processor used in the two Hewlett-Packard models.

Paper capacity also starts at a healthy 700 sheets from the two standard paper trays in the base model to 1,250 sheets in the DTN model and a configurable maximum of 1,800 sheets.

This compares to a paper capacity of 600-sheets on the base models from all the other manufacturers. However, the Dell, Hewlett-Packard and Lexmark models are all capable of accepting 4,100 sheets as a maximum input capacity. Kyocera Mita's FS-4000 falls in the middle, with a maximum capacity of 2,500 sheets.

In addition to a relatively low maximum paper capacity, the duty cycle of the Phaser 4510 is the joint lowest in the group (together with the Hewlett-Packard LaserJet 4250) at 200,000 pages per month. This compares to 225,000 from the Lexmark T642 and to 250,000 pages from the remaining four competitors.

Where the Phaser 4510 does appear to have an edge over most other office laser printers is that it features edge-to-edge borderless printing. In fact, this feature has been available in the Phaser 4500



Hewlett-Packard LaserJet 4250dtn and 4350dtn

since its launch several years ago but is, nonetheless, a very unusual feature for a laser printer. Indeed, if implemented on a colour laser printer, the result would be an unacceptably high level of toner wastage (at an unacceptably high cost).

Perhaps more significant than these hardware features, however, are the productivity features discussed in last week's issue of TCPglobal (Issue #0716).

Even though some of these hardware specifications are not as highly rated as the competition, the Phaser 4510 should prove ideal for a wide range of office environments – particularly where print is a key asset in the activity of the organisation. With few high-speed A4 mono laser printers available, Xerox's Phaser 4510 is a sharp contender and, with its new low pricing structure, is certainly more attractive than its predecessor.

Vista cost savings may be a long time coming

There is a school of thought that says 'it's not the cost of purchasing that matters, it's the cost of management.

Management is an ongoing issue, with an organisation's performance entirely depending on the efficiency and success of the management.

Microsoft claims that its new Vista operating system can reduce management costs by as much as 63% (see TCPglobal Issue #0639) but suggestions are that this is going to be a long time coming. Some users are already keen to remove Vista and roll their PCs back to Windows XP while it seems that large organisations and corporations may well be deliberately delaying rolling out Vista upgrades.



Phaser 6360 from Xerox takes the lead as fastest A4 colour laser printer

If we now transfer our interest in high-speed printing to the A4 office colour laser printer category, we find Xerox dominating the field. There are only two printers that have a mono print speed as high as 40ppm (unless we move to the A3 format) and both are built on Fuji Xerox print engines.

One of these machines is new, the Xerox Phaser 6360, launched during February of this year, and represents the fastest colour A4 printer on the market. Pitched against the Phaser 6360 is Dell's 5110cn.

Moving down the line, the next machines are the 30ppm Hewlett-Packard LaserJet 4700; Epson's C4200 offering 35ppm in mono but only 25ppm in colour (another Fuji Xerox engine); two new machines from Konica Minolta offering 35ppm mono with 30ppm colour (magicolor 5570) and 30ppm with 25ppm colour (magicolor 5550); and two machines from Oki offering mono printing at 32ppm but colour printing at only 26ppm.



Xerox Phaser 6360DN

Otherwise, for colour printing, we're looking at printers falling within the range of 16ppm to 24ppm.

We will include the Konica Minolta magicolor 5570D in the line-up here for two reasons: firstly it does at least hit the 30ppm mark for colour printing; and secondly, it is another printer that is recently new to the market. Hewlett-Packard's Colour LaserJet 4700 is also included because of its 30ppm colour print speed even though it is a full 10ppm slower than the Phaser 6360.

We will not include the new Xerox 8560 solid ink printer (up to 30ppm in mono and colour) because this print speed is in fast print mode that does not give normal correspondence print quality. In order to achieve correspondence print quality, the printer has to be slowed down.

Unfortunately for the other manufacturers, Dell takes the same strategic approach in this sector as it does in the mono laser sector, offering both hardware and supplies

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UK Fast Single-pass colour	Purchase Duty Cycle	Print Speed		Nominal CPP	Mixed mono/colour CPP over 3 years
Dell 5110cn	£570 95,000	Mono	40ppm	0.54 pence	1.93 pence
		Colour	35ppm	4.04 pence	
Hewlett-Packard Colour LaserJet 4700dn	£1,425 100,000	Mono	30ppm	1.25 pence	3.29 pence
		Colour	30ppm	6.02 pence	
Konica Minolta magicolor 5570D	£1,140 120,000	Mono	35ppm	1.21 pence	3.26 pence
		Colour	30ppm	5.92 pence	
Xerox Phaser 6360dn	£1,005 100,000	Mono	40ppm	1.40 pence	3.61 pence
		Colour	40ppm	6.33 pence	

Note that for this level of machine, the mixed mono/colour CPP over three years shown in the accompanying table is calculated on the basis of 5,000 pages per month; 70% pages in mono and 30% pages in colour; is based on the use of maximum capacity supplies; takes into account any standard, or starter, supplies shipped with the device; and also includes the cost of purchase. All prices are manufacturer's recommended prices without tax.



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at significantly lower prices than any of the competition.

In this instance, the 5110cn hardware costs only a little more than half that of the Phaser 6360dn, the nominal CPP for mono printing is 61% lower and nominal CPP for colour printing is 36% lower. When rolled up to represent a three year period of ownership, printing 5,000 pages per month (70% mono and 30% colour), Dell's 5110cn will cost a customer some 46% less than Xerox's Phaser 6360dn and 41% less than Hewlett-Packard's Colour LaserJet 4700dn and Konica Minolta's magicolor 5570D.



Dell Colour Laser Printer 5110cn

In addition, despite fairly heavy discounting on the Xerox hardware (20%), it still leaves the Dell with a 34% advantage over the Xerox! Konica Minolta's printer actually comes off less well, with shallower discounting leaving it undercutting the Xerox by only 2.4% instead of 9.7%.

So, the overall message doesn't change - the Dell 5110cn is a much cheaper way to obtain fast colour printing than the Hewlett-Packard Colour LaserJet 4700, Konica Minolta magicolor 5570 or the Xerox Phaser 6360.

If we put some street pricing to this, in the way we have a couple of times recently where Dell is concerned, the situation changes but not radically.

However, is it the most effective printer? To what extent would it be worth paying the higher cost for one of the other printers? Note: duplex and network are standard on all models selected for the comparison.

Typical Street Prices

UK Fast Single-pass colour	Purchase	Mixed mono/ colour CPP over 3 years
Dell 5110cn	£570	1.93 pence
Hewlett-Packard Colour LaserJet 4700dn	£1,097	2.70 pence
Konica Minolta magicolor 5570D	£1,051	2.87 pence
Xerox Phaser 6360dn	£806	2.94 pence

First of all, there is the fact that the Phaser 6360 prints 5ppm faster in colour than the Dell and 10ppm faster than the closely-priced magicolor 5570 or the Colour LaserJet 4700. Where longer print runs in busy offices are involved, this could easily be a significant factor.

In fact, the situation changes more radically amongst the other three machines than against the Dell machine. Hewlett-Packard's Colour LaserJet 4700 experiences some heavy discounting that not only brings its purchase price very close to that of the Konica Minolta but its supplies are discounted enough for the combination to pull the long-term CPP down below the levels of both Konica Minolta and Xerox - albeit by only a few percent!

Xerox makes claims for its new Phaser 6360 that are true of the base versions of the printers but not as we consider duplex and network-ready versions. With base memory starting at 256MB, the Phaser 6360 certainly has double the memory of either the Dell 5110cn or the Hewlett-Packard Colour LaserJet 4700 - but the new magicolor 5570 also has 256MB.

More to the point, Dell's 5110cn is still 28% lower than even the CLJ4700 despite the lack of available discounting from Dell.

Furthermore, at DN level, the Phaser still has 256MB but so does the Colour LaserJet 4700dn, leaving us with three of the four machines having this level of RAM. So, we need to look elsewhere for the competitive advantage.

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First page to print was another 'best in class' claim by Xerox that just about still stands – probably largely due to the 1GHz processor in comparison to the 867MHz processor used in the magicolor. Both printers claim a first page out time for colour pages as 9 seconds.

Dell's 5110 falls well behind with a 16 second first page out from a 400MHz processor but Hewlett-Packard claims 10 seconds in Ready Mode from its 533MHz processor.

Where the Phaser 6360 certainly is unique is in its use of the genuine PostScript 3 Page Description Language from Adobe rather than the proprietary emulations used by both of the other manufacturers.

In addition, the Phaser 6360 features 'Run-On' black printing, allowing the printer still to print in black even when colour toner is exhausted. This is unusual in a colour printer in this class and may well prove useful in the busy office environment.

Real-time, on-PC, paper tray status would also appear to be a unique usability feature with other on-screen alerts by Printing Scout. The Phaser 6360 also offers banner, poster and booklet printing, together with job accounting data – a high level of usability and management feedback.

Apart from the maximum paper capacity of the Colour LaserJet 4700 that stands at 2,600 sheets, the Phaser 6360 outstrips the other machines in the group significantly. Its basic paper capacity is 700 sheets in comparison to 600 sheets from two of the other machines and 650 from the third. Maximum capacity is an impressive 2,350 sheets compared to only 1,600 from the magicolor. Dell offers a maximum capacity of 2,150 sheets.

Konica Minolta
magicolor 5570D



Konica Minolta's magicolor 5570 stands out in one respect with the unique offering of an optional finishing unit - comprising 2-bin stapler/stacker – and (apparently) the ability to offer secure password printing without a hard disk. An optional hard disk or compact flash card will allow the machine to offer job accounting, font storage and overlay printing.

Dell offers colour access control on its 5110cn, as does Konica Minolta, a feature apparently not offered by either Hewlett-Packard or Xerox. Dell also offers usage tracking as part of its printer management feature set.

Xerox's software features include: troubleshooting with PhaserSmart; printer management using CentreWare IS Embedded Web Server, and on-screen user feedback with PrintingScout.



Hewlett-Packard Colour
LaserJet 4700DN

Where the Phaser 6360 is fitted with a hard drive, customers will benefit for a further range of high-value usability and productivity features. These include: Secure, Proof, Personal, Shared, Saved and Personal

Saved Print; Print With; Hard disk job collation; PDF-direct print; and extended font/form storage.

All of these factors certainly place the Phaser 6360 as one of the more feature-rich and high-value machines. In addition, every bit as significant, are the productivity features detailed in last week's issue of TCPglobal (#0716) ensuring that the Phaser 6360 is an attractive device for high speed office colour printing environments.

For certain customers these features from Xerox will form a high justification for paying the extra long-term cost of running the printer, especially bearing in mind the higher print speed and the fact that the initial hardware purchase cost is attractive by comparison to all but the Dell 5110cn.

