



WHITEPAPER

## GOING GREEN

Does eDM work for the environmentally conscious?

Stuart Evans, Chief Technology Officer, Invu



**One of the side effects of the IT revolution has been an increase in paper consumption – on average we use twice as much paper as we did in 1980<sup>11</sup>.**

***UK business face an increasing volume of “good to be green” messages, many with related incentives or penalties. The UK Government has signalled its intentions by consolidating seven major programmes into a central Waste & Resources Action Programme.***

Backing up the collective environmental conscience is a raft of alarming statistics and many of these are pertinent to the electronic Document Management (eDM) and Enterprise Content Management (ECM) space. Irrespective of the more high tech end of the ECM/ knowledge management arena, it is in the reduction of paper from operations where the fundamental environmental benefits are created. Paper remains the primary information source for a major proportion of businesses. Consider the following scene-setting facts:

- The pulp and paper industry is the single largest consumer of water used in industrial activities in OECD countries<sup>1</sup>; it is the third greatest industrial greenhouse gas emitter, after the chemical and steel industries<sup>2</sup>
- 12.5m tonnes of paper is used annually in the UK<sup>3</sup>
- Office based activity in the UK is responsible for the emission of c.6.8m tonnes of CO2 p.a.<sup>4</sup>
- In the US 750,000 paper copies are made every minute, every day<sup>5</sup>
- The average office worker uses 10,000 sheets of copy paper every year<sup>6</sup>
- 45% of all print outs and photocopies are destroyed before the end of each day<sup>7</sup>
- As a barometer of activity in the UK; energy costs relating to printers and multi-function devices (MFDs) continue to rise year on year in the US, even though energy costs are reducing and the number of devices is plateauing, if not declining<sup>8</sup>
- 1.5 trillion pages were generated from printers, MFDs etc in 2008 (equivalent to c.180 million trees)<sup>9</sup>

Such sobering statistics paint a bleak picture, backed up by a large hinterland of further evidence. However, assuaging green guilt can have very real business benefits. The Carbon Trust estimates that energy savings of 20%, equivalent to more than £157 million pa, are possible for SMEs alone. (Effective management of equipment alone can reduce energy consumption by up to 70%<sup>10</sup>). Organisations implementing green IT strategies must achieve effective ROIs. This document sets out to highlight how eDM/ECM applications sit in this context and whether eDM works for the environmentally conscious.

## **The impact of eDM on consumption**

One of the side effects of the IT revolution has been an increase in paper consumption – on average we use twice as much paper as we did in 1980<sup>11</sup>.

eDM/ ECM solutions are also rare in changing behaviour. Many of us have “Think green – do you need to print this?” messages at the foot of our emails. However, 58% of recipients believe these to be ineffective<sup>12</sup> and even patronising despite the fact that c. 55% of UK bodies adopt or advocate this approach<sup>13</sup>. Although there is a collective desire for sustainability, the unavoidable truth is that many of us are addicted to paper – Kyocera Mita estimates that c.40% of the UK workforce shun on-screen reading of documents in favour of using physical output.<sup>14</sup> The same research quantifies the waste as 6,800 sheets from a throughput of 10,000 sheets of paper for the average UK office worker<sup>15</sup>.

In 2001 Gartner stated that “The cost savings of integrated Document Management ... is potentially huge.”<sup>16</sup> In 2003 this was followed up by a prediction that an average business spend of 1-3% of revenue was being spent on document output.<sup>17</sup>

## Whitepaper: Going Green

However, if so many of us can't resist the urge to hit the print button then won't eDM systems simply be a waste of time? Not according to IDC. It tracked the use of eDM tools across 6 US businesses – taking a Sterling: US Dollar conversion rate of £1 :£1.50 and assuming equivalent relative costs the behavioural impact is striking:

- Annual paper consumption down by 58,000 pages per 100 users
- Annual toner/ink consumption down by £2,153 per 100 users
- Annual energy savings of £3,733 per 100 users
- Annual carbon emissions reduced by 70,300 tonnes per 100 users
- 2,700 trees saved annually per 100 users<sup>18</sup>

Document Management software achieves this by overcoming the inherent issues with physical documentation.

Paper documentation is only available to one person at a time, unless it's been photocopied. It's vulnerable to destruction and mutilation. It also requires a physical search to find it, thereby building in delays in operational processes or knowledge work.

This is compounded if the document is not in its logical location (e.g. in a file being used elsewhere) or is archived. Misfiling exacerbates these issues still further, amplifying the costs, efficiency impact and frustrations. With eDM software, documents are immediately available – the need to hunt for physical files is removed and multiple personnel can use the same document simultaneously. It is speculated that this convenience and security reduces printing and photocopying behaviours generally. Removing paper from any organisation creates a fundamental shift in productivity and cost levels. Readily accessible electronic content means behaviours for searching, amendments, sharing and document processing change away from using paper.

Oracle's content management green calculator is a useful tool determining the environmental impact of implementing an eDM solution. The underlying parameters are slightly different from some of the other statistics here, but the results are still insightful. Here's what the green benefits on an eDM solution look like for an enterprise department or small organisation of 25 staff:

- 204 trees saved every year
- 277 barrels of oil saved every year
- 24,985 kg of carbon emissions avoided every year<sup>19</sup>

## The impact of eDM on processes & productivity

Gartner's oft-quoted statistics for handling paper remain compelling:

- £12.00 – the cost of copying a single document (typically copied 9-11 times)
- £13.33 – the cost of filing a single document
- £80.00 – the cost of retrieving a single misfiled document<sup>20</sup>

The figures may be a little outdated, but even allowing for inflation and behavioural changes since 2000, when they are applied across a typical business the hidden impact will be stark. Extrapolating these across as they stand or in modified format will produce costs which cannot be ignored. However, because these are hidden opportunity costs most organisations do exactly that. There is therefore a clear financial incentive to drive paper out of a business's processes and operations.

Digitising documents removes the requirement to copy or physically file a document. eDM systems will do this and also negate the less frequent but distracting and costly burdens of misfiling. Administration of both paper and electronic documents is enhanced and the need to copy is greatly reduced if not eradicated. Removing paper in particular but also ad hoc electronic document filing will enhance productivity simply through streamlining activities. Reduced interruption also improves the quality of work. These are incremental changes which become second nature to staff once bedded in.

The financial estimates on the savings to be delivered by eDM productivity vary markedly by organisation - one size doesn't fit all. Many eDM/ECM vendors will be able to generate calculations on a case-by-case basis, some more optimistic than others, but let's take an unbiased view based on an average business using a typical eDM solution.

## Data extraction & automation

Once a document is transformed from paper to electronic format, the information can be extracted to become available for automation and reporting. Let's take the simple example of invoice processing. The typical paper flow is onerous and pedestrian and may result in the document passing through a number of hands before the process is completed; even taking an electronic invoice and forwarding it around the organisation for approval (e.g. via email) can still take a little while. A digital equivalent can be used as the basis for an automated process – workflows are initiated based on invoice data extracted as part of the scanning process and the invoice can be rapidly forwarded to the relevant authoriser. Implementing workflow criteria in line with organisational or departmental policy means that this can be further refined. The value of the invoice determines the level of authority needed and therefore who it should be routed to for review.

Integration with an accounts or ERP system can also open up the way for automatic three way matching, to the point where invoices below a pre-determined threshold can be processed without intervention, except maybe on a spot-check basis.

AIIM anticipates that finance departments using eDM/ ECM systems typically see invoice costs reduced by a factor of 10.<sup>21</sup> (AIIM also contends that invoice payments can be paid more quickly to gain from early payment advantages – however, keeping the cash may be more important. Nonetheless, sales processes may benefit from similar performance improvements giving rise to a reduction in sales outstanding and improved cash collection).

Returning to our central “green” theme, reductions in off-site storage and distribution will positively impact on fuel consumption and carbon emissions.

## Email Management

In 2001 nearly 12 billion email messages were sent every day; in 2009 this figure was 247 billion each day.<sup>22</sup> Email sits at the heart of most organisations' ability to operate. However, sheer Inbox overload impacts on performance<sup>23</sup> with silo-ed information and poor audit trails equally significant detractors. Approximately 50% of organisations are only “slightly confident” at best that any emails entailing commitment or obligation are recorded, complete and retrievable.<sup>24</sup> 18% of workers play safe and print important emails<sup>25</sup> – madness in a “green” context. (Newly generated Office documents and emails are routinely printed for paper filing by c.20% of organisations.<sup>26</sup>)

eDM systems typically incorporate email capture functionality, automatically filing business emails and ensuring availability to the organisation rather than just the individual recipient.

## Field operations & distributed environments

For organisations with multiple offices or outposts or, most likely, off-site staff there is a carbon footprint involved around the distribution of paper documentation. Remotely scanning and data extraction allied to the ability to access documentation from afar will diminish travel costs, fuel consumption and vehicle emissions as well as employees' carbon footprint. Where there are similar collaboration technologies this can even mean reducing on-site headcount. Where there is an international dimension, reduction in air travel will make a major carbon footprint impact.

Digitalising as much information as possible and including online collaboration and online meeting solutions also creates greater flexibility for employees in their working day, irrespective of geography. This can have unexpected consequences in terms of improving employee productivity and job satisfaction.

## The impact of eDM on suppliers and customers

According to IDC, “Survey respondents appear willing to change brands as a result of “green” and there is also some customer propensity to pay a premium to “green” suppliers (up to 10%).<sup>27</sup>

There is also evidence that an organisation's green credentials provide an important signal to other bodies and boost new business. This is reflected in stakeholder value, seen as a sign of good governance and gives a favourable brand association<sup>28</sup>. This is particularly so in the public sector. However, purchasing decisions are very rarely altruistic. Evidence of a sustainability agenda is generally of secondary importance rather than a deal-breaker for customer or procurer – competitively though, green credibility may just be an important tie-breaker for contracts.

## Whitepaper: Going Green

eDM also has a positive impact on the movement of physical documents through the value chain. Fuel, vehicle, emissions and additional paper are all reduced where electronic processes are in place, eDM being one significant component of an appropriate IT solution.

A series of less tangible but important benefits are also provided via eDM/ECM solutions. Significantly, quality of service improves, enhancing customer and stakeholder satisfaction. Queries are dealt with more quickly as access to knowledge in the organisation is spread and is much more rapid.

## The impact of eDM on storage

According to ALLM, "many organisations store too much information, for too long and in the wrong format."<sup>29</sup> Frequently, copies are stored as well as originals and filing takes a disproportionate amount of space in the typical office. Storage is expensive but the cost is often hidden on-site.

Off-site storage is more obviously expensive and will incur transport costs and greater environmental burden.

The manufacture of storage equipment itself has a carbon footprint. There is also heating and air conditioning to be accounted for.

The need for storage is substantially reduced once an eDM/ ECM solution is in place. Even if existing archives remain in place, they will not be supplemented by new documentation. (The exception will be those key documents that must be retained in their native format for legal admissibility purposes – these are generally few in kind and number in the UK).

**It is not unusual for commercial organisations taking on an eDM solution to reduce rents or even to sub-let to generate an additional revenue stream.**

## ISO 14001 - A word on standards

ISO 14001 is a series of international standards on environmental management. It provides a framework for the development of an environmental management system and the supporting audit programme. Increasingly, ISO 14001 is important as a badge of environmental credibility. It validates your own working practices as environmentally friendly especially in measuring consumption and waste reduction. eDM is a potentially important cornerstone in achieving ISO 14001 certification.

## Summary

Document Management and Content Management systems are not panaceas but they do represent improvements to business performance in many areas. This is mature technology giving efficiency savings, storage savings and service quality improvements.

**Streamlined processes enhance business performance and knowledge within an organisation is markedly improved too.**

Despite these benefits and the technological maturity of eDM, it is only as "green" matters become central to the way organisations conduct themselves that the environmental benefits are being tracked. Throughout this paper, examples from many sources, both partial and impartial, have confirmed eDM's place in the arsenal of the environmentally conscious business. eDM can be a major contributor to an organisation and its value chain.

# Whitepaper: Going Green

## Further research

Businesses interested in finding out what they can do to make a difference to their business and the environment can find further information here.

- \* [www.energysavingtrust.org.uk/business](http://www.energysavingtrust.org.uk/business) [www.envirowise.gov.uk](http://www.envirowise.gov.uk)
- \* [www.direct.gov.uk/en/NI1/Newsroom/Greennews/index.htm](http://www.direct.gov.uk/en/NI1/Newsroom/Greennews/index.htm) [www.growthbusiness.co.uk](http://www.growthbusiness.co.uk)
- \* [www.greenachiever.co.uk](http://www.greenachiever.co.uk) [www.businesslink.co.uk](http://www.businesslink.co.uk) [www.carbontrust.co.uk](http://www.carbontrust.co.uk)

## References

1. 2,000 – 10,000 gallons per 1 ton of paper (depending on size and type of paper) [IDC & secondary sources 2010]
2. OECD Environmental Outlook, p. 218
3. [www.recycling-guide.org/facts.html](http://www.recycling-guide.org/facts.html)
4. [www.carbontrust.co.uk](http://www.carbontrust.co.uk)
5. [www.cleanair.org/Waste/wasteFacts.html](http://www.cleanair.org/Waste/wasteFacts.html)
6. US statistic: [www.epa.gov/osw/conserve/materials/paper/faqs.htm](http://www.epa.gov/osw/conserve/materials/paper/faqs.htm)
7. [www.panda.org/paper](http://www.panda.org/paper)
8. IDC, 2009
9. Ibid. However, compare this to HP's prediction of 53 trillion digital pages to be printed in 2010 alone (HP Imaging & Printing Conference, 2007)
10. [www.carbontrust.co.uk](http://www.carbontrust.co.uk)
11. [www.faxsolutions.opentext.com/common/files/datasheet-Going\\_Green.pdf](http://www.faxsolutions.opentext.com/common/files/datasheet-Going_Green.pdf)
12. [www.kyoceramita.co.uk/index/landingpage#/environmentalsurvey.html](http://www.kyoceramita.co.uk/index/landingpage#/environmentalsurvey.html)
13. Ibid
14. Ibid
15. Ibid
16. Gartner, "Strategic Analysis Report" Feb 2001
17. Gartner, "Printer and Copier Fleets: The Gold Mine in the Hallway," 2003 [predicted for 2008]
18. All boxed statistics from The Business Value of "Green" Document Management Solutions – IDC 2010
19. Based on the Oracle Content Management Green Calculator (<http://www.aiim.org/green-ecm/content-management-green-calculator.aspx>); Assumptions made: 25 staff, 10,000 4 page documents generated per staff member; 20,000 4 page documents received by each staff member; all documents received filed + 32% of in-house documents filed (i.e. equivalent to 10,000 pages less 6,800 wasted)
20. Gartner, "Document Management: Assessing Costs and Benefits", 2000; US \$ figures converted using £1:\$1.50 rate
21. [www.aiim.org/green.ecm](http://www.aiim.org/green.ecm)
22. Jupiter Communications
23. AIIM, "Email management. The good, the bad and the ugly" (2009) ["Sheer overload" is reported as the biggest problem with email as a business tool, followed closely by "Finding and recovering past emails" and "Keeping track of actions"]
24. Ibid
25. Ibid
26. AIIM, "Electronic Records Management – Still playing catch-up with paper" (2009)
27. IDC, "Green IT & Sustainability Survey", 2009
28. The Economist Intelligence Unit, "Doing good: Business and the sustainability challenge" (2008)
29. AIIM, "Going Green with Content Management – saving more than trees" (2010)