

The Motives for and Consequences of the Introduction of Typewriters and Word Processing in the British Civil Service

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Just as Evening Star was the apogee of steam locomotive design, or the Bristol Flyer was the culmination of stagecoaches, so stationery reached its high point in the British civil service and beyond just as it was about to be swept away by the digital format. This paper explores the drives behind the adoption of the typewriter and associated office technology in the British civil service and, exactly 100 years later, the adoption of digital technology. It argues that the main driver behind both changes was the opportunity to save money. However, the typewriter was introduced to replace hand copying of documents. Letters and other documents were still written by hand and passed to typists to copy. The digital process was quite different. Now documents are drafted, copied and circulated by the same hand. The typewriter revolution had little impact on the then-existing management of information or the creation of records. The effect of the digital was that the old solutions were swept away, leaving chaos in their place.

For the archivist, the emergence of the typewriter comes not so much as a shock, but as a surprise after centuries of handwritten texts. It emerged only gradually and, in some settings, relatively late. Handwritten copper plate was something the present

authors learned to do at school by slavishly copying text from copy books. This was something that one of them failed to master until it was discovered after several inky excursions, he was left-handed. Neither the output of our scratching with steel-nibbed dip pens, nor our technique had any aesthetic appeal. It was a messy business. Children are still required to learn to write, albeit not with dip pens.

The authors, by learning copper plate as schoolboys, followed a long tradition of copying as an accepted way of learning the copyist skillset in the United Kingdom, stretching back for centuries. In R C Surtees' novel »Handley Cross«, Charles Stubbs, who ran a school for aspiring lawyers, commented: »There's Squelchback's settlement [will], that most pupils copy – five hundred pages! Great precedent! Produced ten issues, an arbitration, and a Chancery suit«.¹ In Anthony Trollope's novel »The Three Clerks«, Mr Oldeschole, the secretary of the Department of Inland Navigation, instructed Charley Tudor, one of the clerks, at his interview:

Now [...] just copy the few first sentences of the leading article – either one will do [...] Hereupon Charley began his task in a large, ugly, round hand,

neither that of a man nor of a boy, and set himself to copy the contents of the paper [...] [Mr Oldeschole on looking at the result was dismayed] ›Oh dear! Oh dear! This is very bad; versatility with an ›i!‹ – sympathise with an ›i!‹ And I never saw a viler hand in my life.²

Charley was admonished to copy »the spelling as well as the wording«. Accuracy was important, as copy boys were expected to produce fair copies of all sorts of documents. As the inquiry into the Treasury Establishment explained in 1848:

It was formerly the practice for one of the Secretaries or Chief Clerk to attend the sittings of the Board, to take notes or minutes of the decisions. These were called ›rough minutes‹, and they were afterwards written out fair, and were read at the next Board, when, if they were approved and confirmed, they became the authoritative document upon which the letters and warrants intended to give effect to the decisions were prepared.⁴

Minutes were not the only documents that had to be copied »in a neat and legible hand [...] [and] compared with the originals«. In effect, across the whole civil service »fair copies« of »letters sent out« had to be produced by an army of copy boys and writers.⁶ In the Colonial Office when the incoming mail had been opened, the senior clerk annotated them, suggested a suitable response for trivial matters and for more complex subjects passed them to his seniors who drafted responses for the copy boys to execute.

What concerns us at the outset is the emergence and deployment into the Civil Service of the typewriter in the late nineteenth century. Although attempts had been made to develop a writing machine in the eighteenth century, the first successful machine was the Danish Pastor Rasmus Malling-Hansen's *skrivekugle* (writing ball) that had the appearance of a pin cushion. More familiar was the Sholes & Glidden typewriter, designed in 1873 by Christopher Sholes, an American newspaperman. Sholes also introduced the QWERTY keyboard, still used today. This was done to prevent his machine from jamming when a typist was working at speed, although Sholes claimed that it was

a scientific design to give movement of the fingers.⁷ It went into commercial production by the Remington Arms Company in 1874. It was expensive and sales were few.⁸ Renamed Remington, a remodelled version attracted little interest at the Centennial Exhibition in Philadelphia in 1876.⁹ These prototypes only typed in capital letters, but a modified version, Remington No. 2, in 1878 included a shift key that allowed the user to move between cases.¹⁰ The Remington machine was introduced to the UK in 1876 and was highly praised by *The Times*, which emphasised the improvements in productivity that were possible. They reported that someone writing with a pen could produce 15 to 30 words a minute, while a typewriter could produce 75.¹¹

Typewriters were adopted by some writers at an early date. The Malling-Hansen machine is, perhaps, best known because the philosopher Friedrich Nietzsche owned one. He appears to have had difficulties with it, mainly because it was damaged, but he wrote sixty documents using it.¹² It is generally accepted that the first literary work to be composed on the typewriter was Mark Twain's »Life on the Mississippi«, which he wrote on a Remington in 1883. It was in the late 1880s that the real potential of the typewriter as a tool for increased productivity began to be recognised. In 1889, a competition for speed typing was held in London under the presidency of a Dr. Richardson, Fellow of the Royal Society. The aim was to attempt to beat the record held by a Miss Orr of Toronto who had achieved 98.7 words a minute. Generous prizes were offered. The aim of the event was to focus on the speed of typewriting, and the competitors were all given certificates showing the number of words per minute they had achieved. The idea was that such certificates could be used when seeking employment.¹³

The media studies scholar Joli Jensen has argued that originally the typewriter was envisioned as a means to entrepreneurial independence for women. She cites Gissing's 1893 novel, »The Odd Women«, which centres on the assumption that women would purchase their own machines, train themselves as freelance typists, and then sell their skills on their machines to those who needed rapid, neat manuscript transcription. Typewriter offices were part of this vision; much like the copy shops of today, customers would leave their manuscripts, and return to pay for the typed version.¹⁴

What happened instead, overwhelmingly, was that women came to replace the army of male copyists who had dominated clerical work in the Civil Service up to the 1880s.

Although James Watt, the Scottish inventor, had developed his wet copy process in 1780,¹⁵ it was resisted in the Civil Service, and consequently copying was inevitable. Admittedly, wet copying was messy and time-consuming. In the Privy Council Office

*a large amount of copying is required to be done. As copies of the Orders and Proclamations have to be multiplied to a great extent. This, however, is work which does not demand the employment of men of high intellectual qualifications.*¹⁶

It was unremittingly boring work with none of the benefits of handwriting that later philosophers would have us believe. It was mostly carried out by writers and copyists who were

*hired on a daily basis directly by departments or subcontracted through jobbing law stationers. They were paid by the day (at 5s [25p] to 9s 6d [47p]), by the hour (1s [5p], with two-thirds or 8d [4p] going to the copyists and the remainder to the law stationers as commission) or by the piece (1½d [0.6p] per folio of 100 words).*¹⁷

These arrangements suited departments, but were disliked by the Treasury as both anomalous and expensive.¹⁸ It was as a result of the expense of copying that technology began to be introduced. The Treasury's solution was to attempt to bring copying and printing under its control and from 1878 to sanction the use of typewriters; this was only two years after the Remington had first arrived in London. For a bureaucracy largely resistant to innovation and penny-pinching, this was a remarkably swift adoption of a relatively new invention, no doubt helped by the fact that Remington provided the first models free.¹⁹ However, as we shall see, the Treasury's initial enthusiasm soon ran up against the walls of established practice. The Inland Revenue which collected income tax and wished to experiment with the new machine had carefully calculated the

anticipated saving in keeping with the Treasury mantra that a machine had to be shown to reduce staffing:²⁰

*cost of three male copyists at 35s to 41s per week – £296 per year; capital cost of two typewriters at £21 each – £42; cost of two women ›Machinists‹ at 17s to 23s per week – £104 per year; saving – £150 in the first year and increasing thereafter.*²¹

An analysis of 1894 showed that

*[a] direct comparison of the speed and cost of hand writing a fair copy and typewriting [in 1894] the same document demonstrated clearly that typewriters operated by trained workers, almost always by women, produced far more per day than even the most adept male and boy copyist and women did so for less money.*²²

One advantage of the typewriter was that it allowed the generation of three carbon copies, replacing the need for wet copying or laborious copying out to create papers for the file. Carbon paper seems to have been invented at virtually the same date (about 1808) in England by Ralph Wedgwood of pottery fame and in Italy by Pellegrino Turri.²³ Sir Algernon West at the Inland Revenue envisaged a time when ›typewriting women‹ could take the place of ›copyist men‹.²⁴

The Inland Revenue analysis shows the high initial capital cost of buying a typewriter; each machine cost just less than half the average salary of a typist. However, there was a large return on investment with the cost of the typewriter being repaid more than three times over in the first year. Such rough calculations would not satisfy an economist – they do not include the cost of maintaining the machines which was about 50p a year each, nor that typewriters seem to have worn out after about 8 years – but they do show why there was such a drive to introduce mechanisation.

The introduction of the typewriter, however, was easier said than done. Wariness about the introduction of typewriters and the telephone remained, as Rodney Lowe, the historian of the British Home Civil Service, observed, ›a perverse source of departmental pride‹.²⁵ As Meta Zimmeck has shown:

The introduction of typewriting into the Civil Service was problematic – a protracted, fragmentary and discontinuous process. There were three reasons for this. Firstly, the structure of the Civil Service through which power was diffused and disputed was both horizontally and vertically segmented, so that decision-making was a Byzantine affair – the accumulation of ad hoc decisions negotiated between departments, between departments and groups of civil servants, and between the organization and outside ›political‹ groups.²⁶

It emerged that writers and copyists, far from being casual employees, had become semi-permanent with a range of clerical duties that extended beyond simply copying. Despite pressure from the Treasury, over half the departments refused to introduce typewriters and »stuck with the old methods of hand copying, press copying, and printing«.²⁷ Those departments that did invest in typewriters – they were supplied by the Stationery Office from 1885²⁸ – soon discovered a skilled typist could get through twice as much work as a copyist.²⁹ Not only were women cheaper to employ than male copyists, they were also much better typists. »The numbers of women typists grew very slowly from the original two in 1878 to around ten in 1890, 50 in 1892, 75 in 1894, 110 to 120 in 1900, 170 in 1907 and then surged to 600 by 1912«.³⁰

This Civil Service's rate of adoption of the new technology seems to have been much slower than that of the UK private sector. According to Meta Zimmeck, the number of female clerks in the UK surged from 2,000 in 1850 to 16,600 in 1914 and from 2 to 20 percent of the total number of clerical workers.³¹ We can safely assume that the number of female clerks is a reasonable trace for the number of typewriters in use. The UK lagged behind the United States in adopting typewriters. In 1881 the US's population was roughly double that of the UK, but it was reported that over 40,000 typewriters were in regular use there in the 1880s.³² This was despite the obvious savings to be made from its introduction.

The introduction of the typewriter into government offices may have been helped because some Members of Parliament were users of and advocates for the technology. In 1885 the Irish Nationalist MP, T P O'Connor, told the House »Now, many Hon. Members

were obliged to do a great deal of writing, and some of them were in the habit of using those machines, and the habit made it rather laborious to write in the usual way«.³³ He wanted MPs to be provided with typewriters. His plea was repeated by his fellow Liverpool MP, the Conservative William Rutherford in 1907.³⁴ Both MPs had particular reasons to be early adopters. O'Connor was a prolific writer, a journalist as well as an MP, and he produced parliamentary sketches as well as dealing with constituency correspondence. and Rutherford was interested in the use of technology; he invented a chess notation system for transmitting chess moves over a telegraph.

It was the First World War which gave a huge impetus to the recruitment of female clerks to replace men on active service. Typewriters were supplied to the armed forces and from 1916, women typists were also sent to France to support the war effort. After eighteen months at General Headquarters in France, Major George Partridge, a War Office civil servant, wrote excitedly in 1916: »in every organisation the replacement of the human agent by the mechanical should be sought for and developed to as great an extent as possible?«³⁵ Together with two fellow officers, Norman G Scourie and R A Grieve, he launched an unsuccessful campaign for greater mechanisation in the Civil Service driven by the Treasury.³⁶ By December 1918, the number of women and girls employed in the Civil Service and Post Office was estimated at 225,000, of whom 80 percent were clerks.³⁷ Typists, shorthand typists and writing assistants were brought together in typing pools during the war:

Female employees were segregated, according to Victorian moral standards – a segregation that continued as typing pools, justified by appeals to early-twentieth-century managerial theory, developed. The typical divisions of labor within the Civil Service in much of the twentieth century were therefore as follows: [...] most headquarters typing [employees were] located in centrally controlled pools, partly close to authors and partly at remote locations (on the outskirts of London, where rents were cheaper), in total around 23,400 by 1989. The ›authors‹, mostly male civil servants, worked in Whitehall offices with fountain pen and paper.³⁸

Although the number of temporary civil servants was much reduced after 1918 and approximately 126,000 posts were lost, the new technology had become part of the way the service functioned. After the war, much surplus army equipment was sold, but typewriters were retained. Those returned from the armed forces were carefully repaired and reissued, and new ones were purchased to replace those which were worn out or which had been hired by the government during the war.³⁹

The Civil Service's use of typewriters was to automate the pre-existing process for creating documents. Drafts of minutes and correspondence continued to be written out by civil servants of all grades and sent to the typing pool, just as they had previously been sent to the copy room for fair copying. They were returned for correction and signature. As the Treasury explained to the Civil Service Commission of 1875: »The draft letter, ultimately returned by the secretary, will be fair copied for signature, and for despatch by a writer.«⁴⁰ Although the committee struggled to see the utility of what seemed a cumbersome procedure,⁴¹ it had the important advantage of drawing a clear distinction between the front office, where business is transacted, and the back office, where it is executed. When the fair copied letter was returned for despatch, it could be copied, registered and put away (filed). The drafting of letters for typing, checking, referencing in accordance with file plans and finally registration was an integral component of good practice and efficient office management. Civil servants may well have been unaware of the significance of this distinction in providing them with fiduciary protection when accused of malfeasance. Almost certainly unwittingly, it preserved a connection between the hand, the pen and paper. Senior civil servants, not entirely trusting registries, began requesting two copies of critical outgoing letters that were bound up in letter books in date order and by correspondent and kept in their private offices rather than the departmental registry.⁴²

The Addition of Shorthand

The process of officials writing out documents in ink and sending them for typing began to be challenged by

the use of shorthand. English shorthand systems had been developed in the sixteenth century and, indeed, most medieval official records were written in a highly abbreviated form of Latin. However, shorthand really began to become popular with the introduction of the system developed by Sir Isaac Pitman as long ago as 1837. For the period from 1837 to roughly 1889 shorthand was a separate skill and not associated with typing.

It is only from 1889 that advertisements seeking people capable of both shorthand and typewriting began to appear in »The Times«. Reading through the advertisements makes it clear that 1889 to 1890 was an inflection point. In 1889, »The Times« published the first advertisement for a clerk who had to be a good stenographer and typist. A further advertisement for a clerk on the same day did not mention typing but stressed the need for good handwriting.⁴³ Similarly in 1890, a young lady called Vera advertised for a post as an amanuensis. She claimed to be an expert typist and to be able to take shorthand at 120 words per minute, but she kept her feet firmly in both camps since she also offered neat, rapid long hand.⁴⁴ This value of shorthand as an aid to productivity was first formally recognised by the Treasury in 1894 when it was agreed to pay five pence per hour extra for shorthand typists. This was later reduced to two shillings per week and became so mired in confusion about qualification as to become almost meaningless. It led to conflict when it emerged that male shorthand clerks were paid more than female.⁴⁵

The status of female shorthand typists began to change, however, as senior male civil servants came to view some of them as their »personal secretaries«.⁴⁶ Sir Alfred Herbert, who was responsible for machine tool production at the Ministry of Munitions during the First World War recalled:

Later on, a most excellent typist arrived, a Miss Le Vierge, who knew something of the War Office routine, of which I was profoundly ignorant. The room contained a table, and few chairs and nothing else. I asked my typist for blotting paper, ink and pens. »Oh«, she said »you must fill up a requisition form and send it to the Stationery Department and in due time the things will arrive«. This was my first introduction to »forms«. I gave her five shillings to buy

*what was necessary at the nearest shop. Then I began to get busy.*⁴⁷

The relationship between a senior member of staff and a secretary was complex and did not always follow the simple model where the senior official dictates a letter to a secretary who faithfully types it out. Competent secretaries could do much more, including drafting replies to letters, dealing with correspondence, or, in some cases acting as ghostwriters. The complexities of the relationship were explored as early as 1898 in Elinor Davenport Adams's »Miss Secretary Ethel: A Story for Girls of To-day«, which pits a teenaged private secretary against a boss increasingly dependent on her skill.⁴⁸

No one thought to disrupt this process, even though in the aftermath of the First World War more and more office machinery was introduced in an effort to reduce costs.⁴⁹ According to Rodney Lowe, the Home British Civil Service was a »technological laggard«. As he explained a bridgehead had been built in 1911, not only with the mechanisation of the census but also the new National Insurance Act.⁵⁰ With the establishment in 1918 of the Treasury O&M [Organisation and Methods] Department, which had its origins in the Office Machinery Committee, a huge amount of time was devoted to improving the processes of production and registration in the back office.⁵¹ According to Barbara Craig, by the 1930s, the »word *modern* entered the language of public service in tandem with a concept of the key elements that identified modernity – these included aspects of novelty, machines, and specialist knowledge. Administrators believed that their practices needed to be modern to be considered effective«.⁵² The downside, as far as militant male clerks were concerned, was that modernity inevitably involved the recruitment of more women typists, shorthand typists, and writing assistants – the quaint term given to women who operated the new machinery. Given that women were paid less than men, the Treasury welcomed the opportunity.⁵³

The typewriter reached the apogee of its technology in 1961 with the introduction of IBM Selectric electronic typewriter, using the inter-changeable golf ball which span to the right character and moved effortlessly across the page as you typed.⁵⁴ As late as 1979 the Department of Energy Office Manual specified: »All material for copy typing should be clearly written IN INK. Superintendents

are instructed to return any copy which is not written legibly or is written in pencil«.⁵⁵ »All letters should bear the number of the appropriate registered file and should quote the sender's branch, telephone number, and the reference number of the letter under reply«.⁵⁶ The use of shorthand was discouraged, and dictating machines preferred.⁵⁷ All corrections were to be marked lightly on the carbon and *not* on the top copy.⁵⁸ The Pool operates a special priority service for urgent work submitted by Assistant Secretaries and above; all such urgent work should be sent under cover of Form OS2 and contained in a GREEN folder«.⁵⁹ Assistant Secretaries had personal assistants, but these were not typists. There were clear and unambiguous instructions for handling classified material.⁶⁰ The manual left nothing to chance in the preparation, despatch or registration of documents. Examples of forms and templates were included for every conceivable purpose. Although by now photocopiers were located in offices, these were only to be used »for small non-urgent jobs involving no more than 10 sheets per job [...]. Notices to this effect are displayed on or near each machine«.⁶¹

Chronologically, we have come to the end of the typewriter era and before we describe what succeeded it, it is worth considering the impact of it had on archives. In the UK, the national archival system was governed by legislation which had been enacted in 1838, half a century before the beginning of the typewriter revolution. The antiquated legislative regime had resulted in the National Archives (then the Public Record Office) becoming seen by other government departments in the early 1950s as a failed and antiquarian organisation, incapable of dealing with the flood of records, largely accumulated in the Second World War, which threatened to engulf it.⁶²

Prime Minister Winston Churchill was told in 1952 that the government would have to spend £300,000 (about £9 million in 2021 money) on filing cabinets. He then put his weight behind a committee – the Committee on Departmental Records – that led to the reform of the Public Record Office and new legislation.⁶³ Introducing the new Public Records Bill to Parliament, the Solicitor General said:

Our parliamentary forebears in the early part of the nineteenth century are certainly not to be blamed if

*they did not foresee how very prolific of documents the processes of Government would become, fertilised as they are by typewriters.*⁶⁴

But let us not be too harsh on the typewriter. Anyone familiar with records from the twentieth century will know that the typewriter had a hugely important ally in carbon paper, which allowed three copies to be made of every document. From the 1920s, mimeograph machines and spirit duplicators added to the load, while in the 1970s photocopiers meant that duplicate copies of almost every document could be liberally splashed around.

Advent of the Digital Office

Just as 1889 and 1890 marked an inflection point in the automation of office processes, so did the years 1989 and 1990. In 1989, the National Audit Office published a report on text processing in the Civil Service, on which it was estimated that the government spent £300 million a year.

The objective of the investigation was »whether the arrangements for text processing in Government departments were such as to achieve value for money; and whether departments were successfully harnessing their introduction of new technology to the benefit of the text processing services«. ⁶⁵ Four departments, employing 183,000 staff or 32 percent of the Civil Service, were reviewed. The Treasury had recently conducted a review of central guidelines to departments »including those on text processing« and concluded there was no need for updated guidance. However, it emphasised that all departments »have clear statement of policy for text processing«. ⁶⁶ For example, after scrupulous time and motion studies of secretarial behaviour, the Home Office in 1976 published such guidance with instructions as how to avoid unnecessary keystrokes, such as including stops and commas in address lines. ⁶⁷ As one of us observed, these changes caused much harrumphing among civil servants of a certain age. As had been the case since the introduction of typewriters, the Cabinet Office suggested that text-processing be concentrated in pools, as near to the authors as possible. The Cabinet Office recommended the abandonment of shorthand and

its replacement with Dictaphones. Overall, the National Audit Office found that text-processing services in the four departments were effective. However, it concluded with a note of caution:

*The pace of technological change is increasing. So far, it has increased the versatility of text processing without challenging the basic structure of text processing services. In future, developments such as increased use of personal computers and electronic mail will have a more dramatic effect on the way in which services are provided, reducing the need for dedicated text processing staff. Departments will need to respond flexibly to these changes in order to continue to make the most effective use of their existing text processing staff.*⁶⁸

This, departmental typing pools were already doing with the »widespread use of documents – such as letters and circulars – in standardized formats; another was the use of networked databases to insert specific details such as names and addresses into standardized forms«. ⁶⁹

The British Civil Service was slow to adopt word processors and rudimentary email when they became available in the 1980s. The National Audit Office observed:

*civil servants work with words. They use them to frame laws, advise Ministers, announce casework decisions, provide information to the public and communicate with one another. Much of their work would be impossible without the facility to process the written or dictated word into typed text.*⁷⁰

Restructuring of secretarial grades and a merger of clerical and data-processing grades encouraged the introduction of word processors. A year after reporting on text processing, the NAO issued a further report on Office Automation in Government Departments. ⁷¹ It confirmed the predictions made only a year before:

Office automation is the integrated presentation at the office desk of computer systems applications and facilities such as word processing, electronic mail, diary, file management, databases and spreadsheets. It can lead to significant productivity gains and

*there can be intangible benefits such as faster communications and response to events, and more informative and better presented documents.*⁷²

The report praised the departments that had participated in the report for their careful investment appraisal and encouraged taking advice from the Central Computing and Telecommunications Agency. Although the report predicted that automation could be expected to have a significant impact across the public sector, it underestimated the speed with which change occurred, despite the efforts of the Treasury to keep it »at a manageable pace«, even though its own typing pool did not close until 2000.⁷³ The motive for this change was partly financial; typing pools throughout the civil service were closed down, and their workers redeployed or made redundant. As we shall see, the change to the digital process was also part of a desire to modernise processes.

The introduction of the typewriter had essentially been an automation of the copying process. Civil servants still relied on producing a draft using pen and ink or a Dictaphone. This draft was then sent for typing and the production of carbon copies for filing. It is hard to imagine just how outdated this system was – academics, journalists, poets and novelists had long adopted the typewriter as a method for text creation.⁷⁴ Although, as we shall see, it provided some benefits. The digital revolution meant that, for the first time, civil servants became creators of their own texts.

Speed had less to do with what happened than the, probably unwitting, collapse of the back office into the front office without any consideration of the flow of information needed to deliver effective front office services apart from a touching faith in large databases. This has been a persistent obstacle in initiatives to modernise the Civil Service.⁷⁵ Civil servants, now empowered with their own computers, had little understanding of back office support, for example in allocating documents to the file plan or retrieving files needed to address questions in the front office and perhaps crucially the fiduciary protection afforded by the back office. It was widely and mistakenly believed that many back office functions could be replaced by mainframe computers. In her novel »A Quartet in Autumn«, Barbara Pym poignantly illustrated the

disconnect when describing the retirement of two of her central characters, Miss Crowe and Miss Ivory, both registry clerks in the back office:

*The activities of their department seemed to be shrouded in mystery – something to do with records or filing, it was thought, nobody knew for certain, but it was evidently ›women's work‹ the kind of thing that could easily be replaced by a computer.*⁷⁶

Such technological determinism became pervasive, overlooking centuries of experience in handling information in government.⁷⁷

At the same time with the arrival of the internet, the front office was using multiple distribution channels to access information that may not always have been recorded. Swathes of registry clerks who had provided back office support retired or found new jobs without any consideration of how their tasks were to be redistributed between an enlarged front office and a much more agile back office. This happened in a wave of reformist zeal under New Labour symbolic of new approaches to public management with disastrous effects, as one of the authors has shown elsewhere.⁷⁸ Practice and procedure honed over centuries to sustain an expanding, well-oiled administrative machine were discarded. Although change was swift, it happened piecemeal. Despite the best efforts of the Central Computer and Telecommunications Agency and the Treasury, there was no overarching policy for procurement and, as a result, systems were often incompatible or not fit for purpose.⁷⁹ The change was profound, both authors lived through it and witnessed the absence of systematic planning particularly in approaches to record-keeping that it was assumed could be left safely to computing. Office manuals, designed for use in typing pools, could now be ignored along with experiments in the use of standardized forms and centralized databases. The fact that women dominated back office functions may explain why precedent could be so easily ignored.

The effect of the introduction of networked word processors into the front office can be scrutinized in the evidence presented to the Hutton Inquiry into the death of Dr. David Kelly.⁸⁰ Lord Hutton, a High Court judge, took the innovative decision to publish where possible all the evidence that was submitted, largely emails.

The consequences were worse than those who had railed against the typewriter had feared.⁸¹ The emails themselves make all too clear that the opportunity for reflexion and reflexivity had been lost and in the press of business even the most basic metadata had not been filled in. Subject headings on e-mails, which were submitted in evidence, were not always entered and only the context provided any clue as to what they might conceivably be about. File references were almost entirely absent, with the exception of the daily journal references on a few documents, for example, those written by Sir Kevin Tebbit, permanent secretary of the Ministry of Defence, and Sir David Omand, permanent secretary in the Cabinet Office. It is not difficult to deduce that D/PUS/12/3(278) at the top of the Hutton reference CAB/1/0010–0016 translates as Defence, Permanent Under Secretary volume 12, 2003, item 278. The impression was as Kittler predicted: »The development of the internet has more to do with human beings becoming a reflection of their technologies [...] after all, it is we who adapt to the machine. The machine does not adapt to us«.⁸² This is the very impression that much of the evidence presented to the Inquiry conveys. There was clearly no agreement as to who was responsible for appraisal and filing. John Agar identifies the problem as mismatch in the Treasury O&M Department between the, on the whole successful, mainframe computing projects, such as the welfare benefits system in the 1980s (allegedly the largest project of its kind in the world), and personal computers that were »an awkward size to fit into Whitehall departments«.⁸³ This seems entirely plausible but needs further research.

The lack of discipline in the use of e-mail was in stark contrast to the commitment to e-government which was, allegedly, directed from within the Cabinet Office. »The e-Government Policy Framework for Electronic Records Management«, published in 2001, drew attention to the failure to archive e-mail messages.⁸⁴ It went on to declare:

*A failure to manage electronic documents and transactions as formal corporate records will mean that significant opportunities are lost, for exploiting the content to support new ways of working with faster access to higher quality and up-to-date information.*⁸⁵

The belated response to this state of affairs was the publication in 2008 of »Information Matters, building government's capability in managing knowledge and information« that was published by the Knowledge Council, »a strategic body established to lead government in the better use and management of its knowledge and information« with a foreword by the then Secretary of the Cabinet, Sir Gus (now Lord) O'Donnell.⁸⁶ This document set out a proactive strategy with little analysis of what went before, despite the fact that it bore the imprint of The National Archives (TNA). It was couched in terms of service delivery that related largely to information about individuals or specific projects, known in the UK Civil Service as »particular instance papers« (PIPs), which is not of concern here. Where files are discussed, they are dismissed as a legacy of another age:

*Information management, in a paper age, relied upon clerks and the organised storage of paper files. In an electronic age, it relies upon sophisticated technology and strategic leadership. Technology is evolving at a rapid pace, and our approach to strategic leadership in this area must evolve with it.*⁸⁷

Quite what this statement was intended to convey is a mystery, except possibly to announce the death of the file.

Although philosophers had drawn attention to the consequences of what was likely to happen in this context, they had offered no solutions. The archival community diverted attention for the most part to expensive and wholly unproductive digital preservation strategies, rather than focussing on the process of creation of electronic documents through the keyboard. The US National Archives, for example, ran a multi-year project to develop an electronic records archive. During the period from 2001 to 2011, its completion date was repeatedly pushed back and its budget rocketed from \$317 million to \$567 million. By 2013, it was recognised that the Electronic Records Archive Base System has proven to be limited in meeting the National Archives' needs. The system currently has had many problems with its reliability, scalability, usability and cost, which has prevented it from being adequate for both the National Archives' current and expected future

workload. Between that year and 2017, a further \$24 million was spent improving the system.⁸⁸

Across the United Kingdom, civil service knowledge and information management (KIM) is recognised as a core skill that seems to be made up of a ragbag of different professions, such as librarians, information managers, knowledge managers, records managers and so on, with no overarching methodology.⁸⁹ All civil servants are required annually to renew a baseline course entitled »Responsible for Information«. It is then a matter for individual departments to extend and enhance such skills, but, as in much of the civil administration, there is no overarching policy. There were attempts to address the problem holistically in the wake of a critical report on government record keeping by Sir Alex Allan in 2015.⁹⁰ He reached four principal conclusions:

- a. Good record management, whether of paper or digital records, is essential for good government: to support policy development, to provide accountability, to enable comprehensive evidence to be submitted to inquiries and court actions, and eventually to provide the historical background to government;*
- b. The policies and guidance – largely produced by TNA – on capturing and managing digital information are sound; the problems come in the implementation;*
- c. Existing systems which require individual users to identify documents that should constitute official records, and then to save them into an EDRMS or corporate file plan, have not worked well. The processes have been burdensome and compliance poor. As a result, almost all departments have a mass of digital data stored on shared drives that is poorly organised and indexed;*
- d. The issues split into two: what are the best technologies going forward to ensure that digital information is properly managed in future; and what technologies can help to organise and search existing legacy digital data stored outside EDRMSs (Electronic Document and Record Management Systems).⁹¹*

The government responded in January 2017 with Better Information for Better Government that was abbreviated to Bi4BG, making it almost indistinguishable. The response recognised that in the paper world: »Files and filing were

at the centre of how work got done: they were intrinsic to the flow of work, not an overhead on it. As a result, information could be organised and preserved, and the lifecycle from initial creation through to long-term preservation and presentation was robust.«⁹² Arguing that very little had been lost in the digital domain, the response recognised that there was a need to improve departments' management of their digital assets – »Getting information management right from the outset will deliver short term value through making better use of existing information and expertise and in doing so will deliver longer term value in managing information risks and creating a solid foundation for maintaining public records«. While the response elaborated in some detail the challenges inherent in the transition to the digital, it held out the possibility of the UK becoming a world information management leader.⁹³ However, almost no explanation was given as to how this goal was to be achieved. The response shied away from mandatory change, preferring bespoke solutions, even though the manuals of office practice had been stuffed full of *proformas* for every conceivable eventuality and that many digital objects, such as letters and minutes, had a seamless structure across the civil service. In November 2020, it was announced that Bi4BG would close and the team disbanded, leaving a legacy of assets and knowledge through a Public Sector Report.

The management of digital assets will be »picked up in the future in a different way«, and would include:

the CS Modernisation and Reform Cell, Government Digital Service, the Government Automation Task Force, Government Shared Services and the CS Board-sponsored Interoperability programme (covering the One Estates, One Data, One Employer and One IT activities) and of course TNA. The new (SCS4) Government Chief Digital Officer that is being recruited will of course have their own opinions and ideas.⁹⁴

This is hardly encouraging. There is no one body responsible for finding solutions and to restoring the good governance which was once a hallmark of the British civil administration. It looks all too like a recipe for an accident waiting to happen. One possible way to add value is through the use of templates that

seamlessly allocate records to the file plan and provide a structure for whatever document is being composed.⁹⁵ Such experiments had been a feature in the typing pools in the 1980s.⁹⁶ Once in place as a component of good governance, they have to be rigorously policed.

The trajectory we have described moves from handwritten documents which were hand copied by armies of clerks and then filed. The next stage was that handwritten documents were copied by armies of typists and then filed. The third stage was that documents were, largely, typed by their authors and distributed via email or other means, at which point the system of filing seems to have broken down. The two major inflection points were roughly 100 years apart and both the move to the typewriter and the move to email were motivated by a wish to save money.

Now, a mere thirty years after the digital revolution, we may have reached a third inflection point. It seems that ministers and senior staff in the UK government may be using instant messaging services such as WhatsApp, which can be easily deleted and leave no trace of the correspondence. To quote the activist group Foxglove:

*Senior officials – including Prime Minister Boris Johnson – may be using disappearing message apps like WhatsApp and Signal to carry out government business. These apps allow them to delete messages after they've read them or minutes later. This lack of transparency is an urgent threat to democratic accountability and to the future of the public record.*⁹⁷

There is little cost benefit in using such technologies, but they are extremely convenient to use, offer excellent encryption and, for some, make it easy to delete records of conversations. It is, perhaps, too easy to condemn their use, thus putting oneself in the same camp as those departments which took pride in preferring to continue to use male copy clerks rather than female typists, but there are clearly issues about the creation and survival of the records they produce. Sadly, the experience of the way in which digital records have been handled in the UK so far does not give us confidence that these problems will be solved.

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Abstract

Until the late nineteenth century the British Civil Service relied on handwritten documents which were hand copied by armies of clerks and filed. The next stage was that handwritten documents were copied by armies of typists and then filed. The third stage was that documents were, largely, typed by their authors and distributed via email or other means, at which point the system of filing seems to have broken down. The two major inflection points were roughly 100 years apart, and both the move to the typewriter and the move to email were motivated by a wish to save money.

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