Office of
Tax Simplification

Technology Review:
a vision for tax simplicity

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Contents

Foreword

The perpetual flow of new technology impacts almost every aspect of daily life, including the experience of interacting with the tax system.

Quite apart from the technical challenges of designing and implementing new technology to improve the quality of tax administration, there are deeper questions about what is right or desirable from a broader perspective.

For example, how important is it that every taxpayer is able to understand the detailed mechanics, if the end result can be displayed simply and clearly?

How much responsibility should rest with an individual taxpayer, if the information is available to HM Revenue & Customs (HMRC), to give effect to a tax relief on their behalf?

The purpose of this focus paper is to explore some of these questions to inform an important public debate. At least some of these issues will need to be answered in the near future, as advances in technology continue to make possible new ways of operating the tax system.

The prize will be a simpler and better "user experience" which reflects a balance between individual responsibility and that of HMRC and other stakeholders.

Executive summary

The Office of Tax Simplification (OTS) is the independent advisor to government on simplifying the UK tax system. The work of the OTS is rooted in improving the experience of all who interact with the tax system. In particular, the OTS aims to reduce the administrative burden – which is what people actually encounter in practice – as well as simplifying the rules.

In that context, it is highly significant that technological innovation is leading to all kinds of new products and services designed to manage and improve the administration of a taxpayer's affairs. These innovations seem likely to change the everyday experience of almost every individual as well as many aspects of business and accounting practice, and no less radically than social media has transformed the way in which many in society engage in public conversation.

In the world of tax, this offers the prospect of greater efficiency for taxpayers and HMRC alike, with the potential of improving taxpayer interaction with the tax system and reducing bureaucracy. However, these technologies are largely untested in what is a complex and expansive tax framework. The capacity to deliver in the real world, and to make the transition smoothly, are critical issues, as the government and its agencies look to understand the potential for delivering a better service in a way which gives value for taxpayers' money.

New technology also prompts new questions. For example, when a self-driving car is involved in an accident, who is responsible? Is it the owner, the passenger, the manufacturer, the software developer or someone else? Similarly, if a tax compliance process is largely automated and therefore out of the hands of the individual taxpayer or business owner, does responsibility rest with the taxpayer, the software developer, HMRC or someone else? Who should take responsibility or is it shared?

This short paper sets out a number of ideas and questions the OTS believes need to be considered in developing a plan for the role that new technology could play in improving the user experience, and how taxpayers interact with tax administration.

Key findings

The OTS believes that as technology develops, and opportunities and risks arise, the government should:

1. consider how to mitigate the risk that taxpayers lose sight of their obligations through the use of technology
2. continue to monitor private sector technological innovation to enhance the experience of the taxpayer in managing their tax affairs
3. consider the potential for applying new technology in engaging with the public to deliver efficiency and cost savings
4. monitor the impact of the General Data Protection Regulation on taxpayer choices regarding security, privacy and convenience
5. consider enhancing HMRC's current personal tax account to deliver better targeted guidance and information while also looking at automatic enrolment into this service for all taxpayers
6. consider active monitoring of the impact of moves towards a cashless society and risks of digital exclusion

These measures would complement the substantial volume of work currently in progress within HMRC on exploring new uses of technology to serve taxpayers.

Chapter 1

A vision for tax simplicity

1.1 The current tax system is seen as bewilderingly complex, not just by the average person on the street, but also by businesses and professional advisors. The level of complexity is best demonstrated perhaps by the number of accounting, legal and tax professionals advising individuals and businesses on how to navigate it.

1.2 Technology has the potential to overhaul what has been taken for granted in the past; that forms are necessary, that taxpayers may have to spend hours rifling through receipts when looking to submit a tax return, the need for person to person engagement and interaction with HMRC as the tax authority, or the way in which HMRC proactively engages and interacts with taxpayers.

1.3 This short paper looks to bring to light what might be considered some of the key issues for seeking to simplify tax going forward, and the role of technology in both meeting and setting challenges in the future.

1.4 Tax simplification is not easily defined because it inevitably means different things to different people. For a business, it may be simplification of processes to claim tax reliefs and the ease with which they can engage with HMRC specialists; for a tax advisor, how easy it is to navigate the machinery of tax processes or complex tax legislation; or for an individual, how to manage their own tax affairs.

1.5 Efforts to simplify the tax code should not only focus on reducing administrative burdens, but also, for example, to tackle complexity to make sure that the UK is an attractive proposition for investment. Tax complexity may well be one of the issues a business or investor may consider when deciding on what, and where, they invest.[1]

1.6 The likelihood of any effective, wholesale reform of the current tax code seems a distant and difficult objective. Although the Chancellor has helpfully (in our view) moved to having only one fiscal event (the Budget) a year, changes to tax will inevitably continue. This is because political decision making through the annual Finance Act, builds on the existing code, creating new tax policy and new challenges year on year. Although this will not change, it does not detract from the need for tax to be kept under constant surveillance for opportunities for simplification, in order to deliver benefits both for taxpayers and government.

[1] https://www.oecd.org/daf/inv/investment-policy/40287364.pdf

Is the question therefore, not how we can simplify the code, but how we can simplify taxpayers' interaction with it?

1.7 So, should an objective for tax simplification going forward not only be seeking to reduce the number of complexities in the system, but how, with new technology, these complexities can best be managed to improve the experience taxpayers have when engaging with and navigating the system?

1.8 This should also always be coupled with retaining a focus on the ever-present government objectives of tax compliance and collection, and reducing the tax gap.

1.9 The OTS firmly believes that understanding the experience of the user, the taxpayer, is critical in identifying ways to simplify how people manage their tax affairs and improve understanding of their obligations on tax.

1.10 If technology is a key route through which the tax experience can be simplified, should simplification of tax also focus on understanding more clearly what the needs of the individual are? For example, how can taxpayers manage their tax affairs in as straightforward a way as possible, while at the very least retaining an understanding of their tax responsibilities?

1.11 Should the authorities seek to create a sense of ownership for individuals as far as their tax footprint is concerned?

1.12 In seeking to answer these questions, first, it is important to understand what the taxpayer wants and how this can be delivered within the established constraints over public finance, with the need to demonstrate value for money whilst ensuring the benefits outweigh the costs.

1.13 In 2017, HMRC conducted research on how the public interacted with HMRC and found that the most likely age group to contact HMRC, other than through an online portal, were the 16 to 24 age group, the most digitally active group in the UK. It would appear then that there is a disconnect between the digital service that HMRC currently offer, and the demands of taxpayers who have sought help from HMRC in managing their tax affairs. This may be due to experience, education or otherwise, but it is clear that just because an individual may be technology savvy, it doesn't necessary mean that technology is answering all their concerns or questions.

1.14 HMRC have a history of seeking to embrace technological innovation in how it administers tax. The latest developments focus on HMRC's ambitious Making Tax Digital (MTD) project, but HMRC has worked to improve administration through, for example, it's chat bot ('Ask Ruth'). HMRC also now use enhanced data analytics to better understand the needs of taxpayers, as well as rationalising its own resources to deliver technologically focused outcomes.

Making Tax Digital (MTD)

1.15 HMRC's ambition is to become one of the most digitally advanced tax administrations in the world. MTD is a strategy to deliver that ambition and

will involve fundamental changes to the way businesses interact with the tax system.[2]

1.16 Under MTD, businesses will need to keep digital records and use compatible software to send their tax returns or updates to HMRC and receive information.

1.17 Keeping digital records and providing updates to HMRC directly through MTD-compatible software is intended to reduce error, uncertainty and worry. This streamlined digital experience will integrate tax into day to day business record-keeping, so that businesses can view their tax position in-year and be confident that they have got their taxes right. [3]

1.18 The OTS can see the potential for digital integration to make tax simpler for taxpayers, and therefore this initiative is to be very much welcomed in principle. To ensure a smooth transition, taxpayers should be given sufficient information and time to move into the new regime.

1.19 The timetable for roll out of MTD for all taxes has been extended, but the overriding commitment and vision remains. An income tax pilot is available for taxpayers who wish to begin the transition now. VAT-registered businesses above the threshold (currently £85,000) will be required to keep records digitally and file returns using MTD compatible software after 1 April 2019.

1.20 HMRC's vision for their digital transformation work is to provide digital services for their customers that:

- are easy-to-use, convenient and personalised for individuals, businesses and agents
- promote digital take-up and voluntary compliance by designing for customer needs
- use data to help customers avoid errors through pre-population
- provide assistance in using or accessing our services for those who need it[4]

1.21 In seeking to achieve this vision, significant work is required before it can be said that the UK has a ground breaking, world leading digitised tax service.

Personal responsibility for paying tax?

1.22 For most employees working in the UK today, tax is not something they worry about on a day to day basis because they are employed, and their employers effectively manage their tax affairs for them through established

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[2] https://www.gov.uk/government/publications/making-tax-digital/overview-of-making-tax-digital

[3] https://www.gov.uk/government/publications/making-tax-digital-for-business-stakeholder-communications-pack/making-tax-digital-for-business-stakeholder-communications-pack (12.1)

[4] https://www.gov.uk/government/publications/hmrc-digital-strategy-2014/hmrc-digital-strategy-2014

mechanisms such as Pay As You Earn (PAYE). Latest statistics show that up to 27 million[5] people in the UK work under a PAYE scheme.

1.23 Since 2014, HMRC has used real time information (on tax) as a statistical tool to help it understand the demographic of taxpayers and how this shifts over time. Up to now, HMRC required employers operating PAYE to submit data to HMRC every time an employee is paid.

1.24 The system covers around 2.3 million PAYE schemes. The large number of records and the level of detail the system holds means the data can be used to identify gender, age and area of residence to give much more real time information about shifts in employment and incomes.

1.25 This information is important to help HMRC understand the demographics of the employed taxpayers.

1.26 Although most employed people never have a need to scrutinise the tax they pay through PAYE, legally, even under PAYE, there is a degree of personal responsibility for managing tax affairs. For example, the individual may be liable to pay HMRC any underpayment of tax, even where this has arisen as a consequence of PAYE being applied by their employer incorrectly.

1.27 Of course, personal responsibility for managing one's tax affairs is most acute where an individual is self-employed, where they have to actively manage their tax affairs in meeting their obligations under law. Latest statistics[6] from The Office for National Statistics (ONS) show that around 4.8 million people in the UK are self-employed. The vast majority of these taxpayers will be responsible for their own tax affairs and will not fall under the provisions of PAYE (although it is likely that there is some overlap where individuals are both employed and self-employed).

1.28 Will tax be most effectively and efficiently paid by continuing to expect that taxpayers, most acutely the self-employed, shoulder the personal responsibility for managing their tax affairs?

1.29 Or will technological development (and the move away from cash transactions) enable tax to be calculated and taken direct from the taxpayer by HMRC, without the need for the individual to do anything other than perhaps press a button?

1.30 Part of this question relates to the future relationship between the taxpayer and the tax administrator, and how tax will be paid in future. Looking ahead, to understand the relative merits of any innovation, it is important to understand what the taxpayer wants from the tax administrators.

1.31 This is especially true given that in reality, the taxpayer is responsible for their own affairs, and should be aware of their tax obligations, whether they relate to, for example, income or property. If technology provides an opportunity for the taxpayer to disengage from these responsibilities, this

[5] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/summaryoflabourmarketstatistics

[6] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/summaryoflabourmarketstatistics

may create risks for both the exchequer and the taxpayer. The exchequer may lose out if taxpayer activity falls outside of an established technological process to record and account for tax, while the taxpayer may lose out if they do not fully understand their obligations, and do not possess the knowledge to challenge any tax assessment made by HMRC.

1.32 Neither of these scenarios can be considered progressive in terms of simplifying tax, and so the OTS believes that the government should consider this issue in more depth. One area that might merit thorough investigation is through engaging with future taxpayers, such as school and college pupils, on the role of tax and their future responsibilities in meeting obligations.

1.33 HMRC have already established learning tools through various media fora, for example YouTube, to educate people about tax, and the OTS believes that this important work should continue.

Key finding 1: Government should consider how to mitigate the risk that taxpayers lose sight of their obligations through the use of technology.

Innovation

1.34 Technology will provide the capacity to simplify tax administration and enable administrators to engage more freely with taxpayers. HMRC's MTD initiative should provide a significant step forward in making it easier for businesses to manage their tax affairs by using compatible software to send their tax returns to HMRC.

1.35 These stipulations, made by HMRC to mandate businesses to use compliant software, should ensure that as technology develops, the needs of the public sector in administering tax are aligned with the innovation being seen in the private sector on tax technology. HMRC and software developers should therefore continue to work closely together, to ensure that products are developed which meet customer needs.

1.36 The impact of technology across society continues to drive innovation and development. To put this into context, it is less than 25 years since the first 'smartphone' went on sale, preceded only by a couple of years by the invention of the world wide web. Today, technology built to make decisions based upon experience, such as machine learning and driverless cars, no longer appear to be exclusive to those with a vivid imagination, but now attract billions of pounds in investment.

1.37 The OTS has seen interesting recent developments in the private sector. Moves to create a tax 'bot' by LexisNexis, based upon the assimilation of the entire Tolley's tax volumes catalogue into a program where an individual can ask a (tax) question and receive a technically informed answer. This type of 'AI' program is among many which are being developed to improve accessibility to technical tax information.

1.38 Furthermore, accounting firms have developed systems to categorise transactions for tax purposes, meaning that a process (for determining eligibility for capital allowances) which would have previously taken four people 75 hours to complete, can now be delivered in under one minute to over 99% accuracy using line reading software.

1.39 In addition, the private sector is making great strides in developing open banking solutions to assist taxpayers in managing their tax affairs. HMRC are working on ways in which these fintech innovations can be aligned with their own work on technology, to ensure that the potential of these are utilised to maximum effect.

1.40 One option to test new innovation would be for government to establish a 'sandbox' to see practical applications of new products in a controlled 'real market place'. Such procedures have been introduced elsewhere in the economy, for example the Financial Conduct Authority's regulatory sandbox for financial technology. This allows early-stage fintech start-ups to test out their offerings in a limited market environment, under regulatory supervision, but without having to be fully licensed.

1.41 There are risks with this approach – there have been accusations that technology companies promote their products with a reassurance that this is part of the FCA initiative, developing PR to promote their business ideas rather than it acting as a transparent testing ground before full market exposure.

1.42 However, the OTS believes that this initiative does have merit, and believes that HMRC should consider whether such a scheme could help in testing technology in a tax environment.

1.43 So on the one hand, technology could remove complexity for the taxpayer by lessening the need they have to engage with the tax code and authorities, but on the other, will it reduce the level of knowledge of tax and so lead to less engagement from taxpayers? For example, will technology lead to poorer understanding of tax, and damage the confidence of taxpayers to challenge the authority if they believe they have been charged an incorrect amount?

1.44 One thing which is clear is that technological innovation will lead to the delivery of administrative functions with less dependence on human endeavour to fulfil such tasks. It may be possible that increasing resources could be dedicated to providing a more expert service, dealing with trickier issues raised by taxpayers rather than less complex, rudimentary issues which may be resolved through the use of new technology.

1.45 Could this also lead to the prospect of a better, more expert and personalised service from HMRC, allowing for more in depth understanding and discussion with the taxpayer?

1.46 The alternative is that resource savings from the use of technology are not re-invested into improved tax collection but used to meet other spending priorities of the government. The decisions as what the public finances are spent on is of course for the government.

1.47 One of the key challenges, therefore, when looking to the future is the extent of the need to manage this interaction between the taxpayer and the administrator.

Key finding 2: Government should continue to monitor private sector technological innovation to enhance the experience of the taxpayer in managing their tax affairs.

Technology and the State

1.48 With the National Insurance number, the concept of the individual being identifiable to the state as far as working and tax are concerned is, from a young age, accepted in UK society. Such identification mechanisms also apply across numerous other state functions, such as passports, health, driving and welfare benefits.

1.49 On the face of it, there appears to be no technological reason why a single identification number could not be issued, with this number being the key to access all manner of records held by the state, for example tax records, health records and driving records. It is important to note however, that considerations of the pros and cons of instilling any technology in state bureaucracy architecture should include whether such a collation of data in one place could be viewed by the general public as overly intrusive by the state.

1.50 And how would this information be accessible to the individual whose records they are?

1.51 Technology is emerging which may make government held data across agencies easier to access for the individual concerned. Although this paper does not look to recommend winners and losers in applying new innovations, primarily because the OTS has not made any assessment of costs, but also because technology is moving so fast - what is new today maybe obsolete and surpassed by innovation tomorrow.

1.52 However, through the work of the OTS technology panel we have looked at the use of blockchain technology. Although it may not be the right technology for tax administration, it does provide a useful pointer as to the potential for technology to play an ever greater role in how the state administers the information provided by individuals.

1.53 Theoretically at least, blockchain shows a way in which personal information administered by the state could be improved, and potentially provide a more transparent service to the populace.

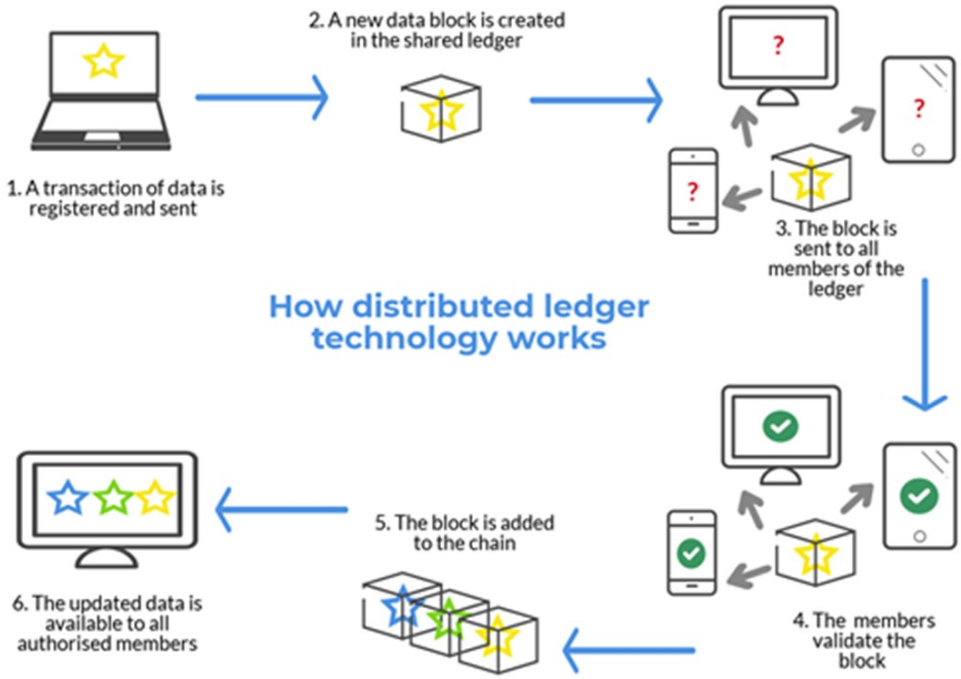
Blockchain (distributed ledgers)

1.54 The much vaunted use of blockchain (distributed ledgers) technology to manage the volumes of taxpayer information necessary to deliver a world class tax administration is untested. The OTS has also not made any assessment of the costs of establishing such an overhaul of state records may imply and whether this would be prohibitive.

1.55 However, although Blockchain technology is not a silver bullet, it may have the potential to be a critical tool in streamlining how we administer tax and how people interact with the tax system and deliver longer term cost savings and efficiencies.

A blockchain is at its core simply a distributed database. This means that the information stored on the database is not held in one place but 'distributed', it is not a single private database held by an individual but a public database accessible by others. Each piece of information is held, date stamped and put into a 'block', which cannot be altered once it is agreed. As more information is added to the database, more 'blocks' are created to form a link to the previous, leading to a chain of 'blocks' held relating to that specific entity. Therefore, a 'blockchain' is created.

Chart 1: How distributed ledger technology works



Source: OTS

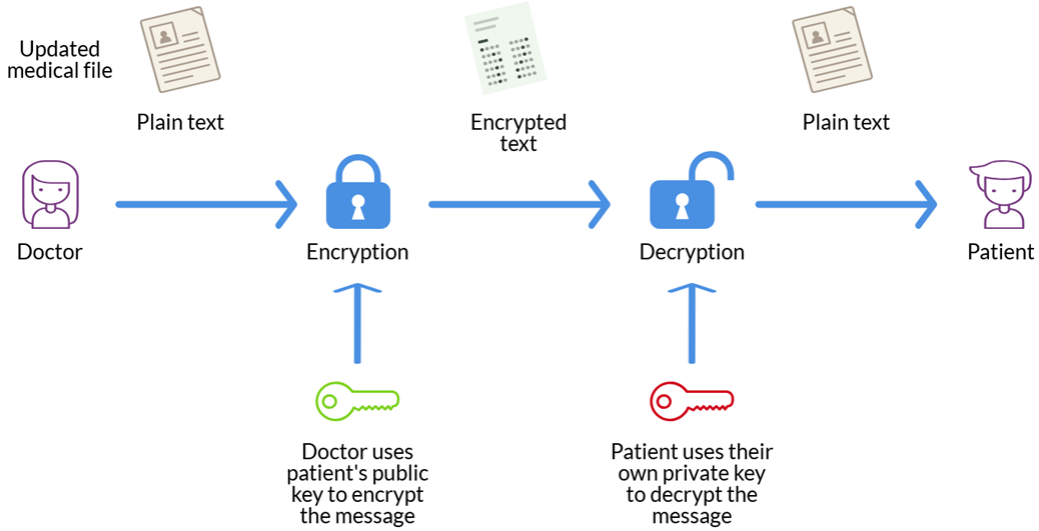
1.56 To ensure the integrity of the blockchain, only designated entities can add to, or have access to it (this is controlled by cryptography – basically restricting the access to the blocks through the provision of virtual security keys). Because the blocks are immutable, that is they cannot be altered once added to the chain, this provides a barrier to any source seeking to alter the information held after it has been added.

1.57 For example, you have a medical record, this is held in a block. Additions to your medical record are added by those with the requisite security key, creating another block 'chained' to the previous. These are time stamped and shared to those who have access, ensuring that the records a key owner sees are the most up to date, and agreed. This block of additional information cannot be altered by a third party to, for example, compromise the integrity of the record.

1.58 So, in this example the security key owners are the patient and the doctor. The doctor adds to the patients blockchain the latest information on that individual's health using their security key. The individual can also access this

information through their own security key but cannot change it because the blocks are immutable.

Chart 2: Blockchain and health records



Source: OTS

1.59 Using a blockchain may streamline the way in which the taxpayer and administrator interact. Using a blockchain to manage business transactions may also allow for immutable data to be trusted by tax officials in assessing tax liabilities, improving accuracy and tax compliance.

1.60 Blockchain may also be used one day to connect databases across all areas of the government, meaning departments are connected to the same source of information, and individuals don't have to keep sending this same information repeatedly. These are the core benefits why blockchain remains of such interest, because fundamentally such an approach may have the potential to offer significant efficiency and cost benefits.

1.61 Blockchain is being used in the public sector in many jurisdictions, including in the UK (see annex A) but not to the extent that it is linking state records across different agencies. There may be a clear justification in terms of administrative efficiency and saved resources, but using a solution such as a 'blockchain' may not be palatable for reasons of public scepticism and concern. This is because any holistic solution to state administration may be culturally and politically contentious - as is evident from debates about the previous suggestions to introduce a UK national identity card.

1.62 Furthermore, such technology is untested on such a scale, and therefore the government may wish to hold back on making any judgements on the feasibility of deploying such technology until the opportunities and risks of using it become clearer.

1.63 Although accessibility to information can be restricted through, for example, security keys, thought should also be given to how individuals can be reassured that only those who need to see such personal information do so.

1.64 How can an individual be reassured that their health records are not being viewed by tax officials, and their tax records not by health officials? And how

can people feel reassured and trust the system to keep their data safe from third party, unauthorised access?

1.65 These are basic questions that would need to be resolved before any such system could be generally acceptable to the public.

Key finding 3: Government should consider the potential for applying new technology in engaging with the public to deliver efficiency and cost savings.

Security and privacy

1.66 When looking at the opportunities that technology may present for transformational benefits to tax administration, a core underlining issue is the security of data, and the rights of the individual to protect their privacy and to manage the records held about them. Security and privacy are also key drivers in digital exclusion with the fear of exposing personal data online being a very real concern, especially for older generations, and this is compounded by regular news stories about large multinational corporations being hacked and personal data being stolen.

1.67 A 2018 global survey on internet security and trust[7] carried out by the Centre for International Governance Innovation (CIGI) and Ipsos looked at questions of privacy, security, access and trust. They found that globally, a majority (52%) are more concerned about their online privacy compared to one year ago, with cyber criminals and internet companies continuing to be the primary sources of respondents' concerns.

1.68 The same survey also asked whether respondents had changed how they behaved online within the last year, and whilst the levels of change in behaviours are consistent with the previous year's responses, the top three most common answers given were to:

1 avoid opening email from unknown email addresses

2 use antivirus software

3 avoid certain internet sites

1.69 Whilst globally trust in the internet remains quite high (73%), of those who indicated that they did not trust the internet, nearly half (48%) said that they felt that the internet was not secure.

1.70 Security is often something people take for granted especially when using apps and social media and think nothing of entering large amounts of personal data on to a site just to have the convenience of a single log in or free Wi-Fi.

1.71 It would appear that for many, convenience often overrides the desire for privacy until something goes wrong. Security and privacy settings are often confusing or hidden away and so many people do not take the time to consider the implications of not having the correct privacy settings in place.

1.72 Despite the huge outcry following the report that Facebook had been handing over user data to other companies, this has not stopped people

[7] https://www.cigionline.org/internet-survey-2018

from continuing to add more personal data to its site. This in part maybe a consequence of the lack of transparency over what information is held, and the difficulty individuals face in erasing any data from their digital footprint.

1.73 There have been several studies around the debate between privacy and convenience which have shown that privacy is generally pushed aside for convenience and that it only takes small incentives for people to be swayed to part with personal data about themselves.

1.74 A paper[8] published by the National Bureau of Economic Research in June 2017 called 'The Digital Privacy Paradox', found that:

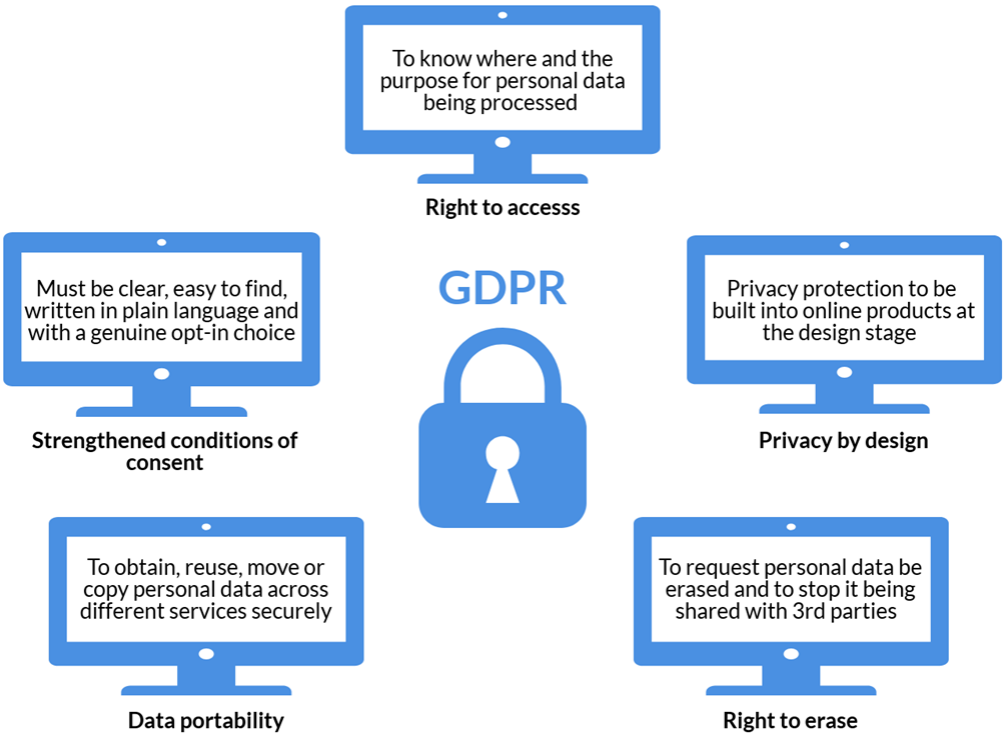
> 'Consumers say they care about privacy, but at multiple points in the process end up making choices that are inconsistent with their stated preferences...small incentives, costs or misdirection can lead people to safeguard their data less...'
>
> '…whenever privacy requires additional effort or comes at the cost of a less smooth user experience, participants are quick to abandon technology that would offer them greater protection.'

1.75 The introduction of the General Data Protection Regulation (GDPR) in May 2018 seeks to address some of these concerns and give individual's more power over what happens to their personal data.

1.76 Whilst it is too early to see how effective these new rules are and to see whether individual's use the new powers to take back control of their data, one key element of the GDPR is the requirement for privacy by design. This means that there is now a legal requirement for data protection measures to be built into the design of new online products and apps.

8 https://www.nber.org/papers/w23488.pdf

Chart 3: General Data Protection Regulation



Source: OTS

1.77 So, what are the negative consequences of all this convenience? On the face of it, it would seem not a lot, but for every click or piece of information entered or posted, a digital profile expands - a profile which may be viewed by potential employers, banks or insurance companies, who then use this data to form a picture of you and make decisions on your suitability for jobs, loans etc irrespective of how accurate the data may be. There is also the potential for hackers and criminals to steal and sell data, which may ultimately lead to bank and credit cards being cloned and identity theft.

1.78 In terms of tax administration, the collection of taxpayer data must be carried out in a way that ensures privacy and guarantees security of the data being provided, whilst retaining the convenience of online interaction. It is also important that the uses of any data are as transparent as possible to engender trust between taxpayer and tax administration.

1.79 Privacy and security of information is a key area of concern, not just for the public but also for administrators. It is unlikely that such concern will ebb away in the near future, and that is why it must remain a key issue of focus for tax administrators going forward. The OTS believes that alongside this focus on privacy and security, administrators should continue to monitor public attitudes and also the impact the GDPR is having on digital behaviours.

Key finding 4: Government should monitor the impact of the General Data Protection Regulation on taxpayer choices regarding security, privacy and convenience.

Interacting with Taxpayers

1.80 Before any installation of new technology into state bureaucracy occurs, the government should continue to fully communicate to the public what the potential implications are.

1.81 Can more be done to help taxpayers control their tax affairs when they want, and to manage their tax payments in a more flexible way, alongside ensuring that they do not miss out on available tax incentives which may be critical in growing their business?

1.82 Furthermore, where income is not predictable week to week or month to month, could a better way of managing annual tax liabilities be considered, especially for those who may only have short term employment at particular times of year – such as those employed over the summer?

1.83 Are there ways to help taxpayers feel a greater sense of ownership over their legal obligations, and the tax they pay?

1.84 The OTS published a paper 'Guidance for taxpayers' earlier this year, setting out thoughts and recommendations on improving and reforming how HMRC manage the public facing guidance they provide, to help taxpayers navigate the tax system.[9] One of the recommendations of the report was that '*More work should be done on using technology to direct people to enter the guidance at a point appropriate to their needs and level of understanding of tax*'.

1.85 Technology may also play a key role by potentially creating a more direct route through which people could engage with and take ownership of their tax affairs. For example, HMRC already have in place a voluntary facility to establish a 'personal tax account'.

1.86 This paper takes the OTS recommendation a step further by considering how this may be achieved.

A personal tax account

1.87 Every taxpayer is eligible to set up a personal tax account through HMRC. Currently, the tax account will allow the individual to do the following:

- check Income Tax estimate and tax code
- fill in, send and view a personal tax return
- claim a tax refund
- check and manage tax credits

9 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746076/OTS_Guidance_for_taxpayers_041018.pdf

- check State Pension
- track tax forms submitted online
- check or update Marriage Allowance
- tell HMRC about a change of address
- check or update benefits from work, for example company car details and medical insurance
- find National Insurance number

1.88 At age 16 all UK citizens are issued with a national insurance number. This number stays with you throughout your life. It plays a critical role in, for example, establishing eligibility to employment, as well as entitlement to, and calculation of pensions and benefits (contributory).

1.89 Would it be acceptable to make having a current personal tax account and identification a mandatory requirement akin to the issuing of a national insurance number (or even having a single tax and national insurance number)?

1.90 For example, at age 16 as well as receiving a national insurance number, an individual is also automatically enrolled into a personal tax account?

1.91 The OTS has not made any assessment of the relative costs and benefits of introducing such a scheme but believes that this is an idea that deserves further investigation.

1.92 One of the key questions surrounding technological innovation and tax is that technology will create opportunities for taxpayers to lose all oversight of their tax obligations, having tax automatically calculated, scrutinised and paid to HMRC.

1.93 Could expanding the scope of the current personal tax account play a part in developing a sense of ownership for people over their tax affairs?

1.94 Could this facility also be expanded to cater for other services and interactions with taxpayers? For example, would linking a person's tax account to their employment history - as well as advice and guidance, updates, changes in tax legislation, tax history and so on - encourage taxpayers to take more ownership of their tax profile?

1.95 For example, when an individual registers as self-employed, through their online account, guidance for self-employed people could be targeted at them, as well as, for example, being directed towards any tax policy announcements which are specific to the self-employed.

1.96 Through this direct channel to individuals and their own tax accounts, it could empower the taxpayer to understand tax and the important role it plays in society. In addition, as mentioned earlier in this paper, education of the next generation of taxpayers is one route through which people's responsibilities under tax can be usefully explained. An enhanced personal tax account could also include educational tools for people to learn about

tax and their obligations in paying it. This could be simply linking existing educational tools through the personal tax account.

1.97 In summary, could an enhanced tax account facility adequately address the commonly held belief that technology will wipe out much of the need for individuals to interact with the tax system, thereby reducing their understanding of it?

Key finding 5: Government should consider enhancing HMRC's current personal tax account to deliver better targeted guidance and information while also looking at automatic enrolment into this service for all taxpayers.

Consumer choices

1.98 Technology is also changing how we spend and manage money. It is already commonplace for consumers to purchase goods and services with a simple tap of a card on a card reader. The 'internet of things' may provide further opportunities for seamless domestic transactions, such as automatic purchasing of goods through household appliances, for instance ordering a litre of milk when a refrigerator identifies that there is none left.

1.99 It is clear therefore that cashless transactions are becoming, and will continue to be, more and more prevalent, with a related decline in the use of cash. But this isn't without concern.

1.100 The push by the financial services sector for people to move towards cashless transactions (and therefore away from cash) is a contentious issue. In theory, it should lead to more efficient processes for business, with electronic transactions leaving an auditable trail allowing for more accurate calculation of tax, and a reduction in fraudulent activity.

1.101 Theoretically then, this should have obvious advantages in terms of HMRC efforts to ensure tax compliance and reduce the size of the UK's shadow economy. Research undertaken by NatCen, commissioned by HMRC, found that cash transactions accounted for 56% of total transactions in the shadow economy. However, it is important to recognise that HMRC are aware of avoidance activity using cashless technology, for example, through software designed to suppress the recording of electronic transactions. This would suggest that the shadow economy may continue and perhaps thrive even where electronic transactions are the norm.

The Shadow economy and the Tax Gap

1.102 Estimating the size of a shadow economy is, by its very nature, notoriously difficult. A study by the International Monetary Fund estimates that the size of the UK's shadow economy is around 11% of GDP,[10] equivalent therefore to over £200 billion per year. Compared to EU countries this is actually low, with some southern European countries having a shadow economy of in excess of 20% of their GDP.

1.103 Tackling the shadow economy has always been and remains a key issue of concern for HMRC. However, recent work by HMRC indicates that those who

[10] https://www.imf.org/en/Publications/WP/Issues/2018/01/25/Shadow-Economies-Around-the-World-What-Did-We-Learn-Over-the-Last-20-Years-45583

are determined to evade tax will continue to seek methods by which to do so.

1.104 So, it is far from certain that electronic transactions will have as significant impact on reducing the tax gap[11] caused by evasion and criminal activity as hoped.

1.105 Furthermore, it is worth remembering that not all transactions undertaken in the shadow economy would be taxable, and therefore any role its reduction would play in reducing the tax gap is uncertain.

1.106 But, the tax gap is complex, and other significant contributors to it include the inaccuracy of tax returns and a failure by taxpayers to take reasonable care (not linked to intentional evasion and criminal activity). These two elements of the tax gap when considered together are estimated to cost the Exchequer around £9.5 billion per year. So, while criminal activity may continue, an increase in electronic transactions may offer an opportunity to improve accuracy and due care and therefore increase the tax take.

Cashless society and tax

1.107 There are also legitimate concerns that the drive for a cashless society is coming at a cost to small businesses, as well as leaving individuals (most acutely in low income rural households) marginalised. It is estimated that 2 million people in the UK almost exclusively transact in cash, and that 1.7 million do not have a bank account.

1.108 The use of cash, as well as the absence of a bank account is most prevalent among the lower socio-economic groups in the UK. There may be many reasons for this – accessibility, previous history (for example, difficulties faced by some previous offenders in accessing financial products and services), how people are paid, and education.

1.109 Coupled with the understandable moves by banks to increase their digital presence, with for example internet banking, there has been a decline in the number of local branches of banks, leading to those who transact solely in cash feeling even more isolated than before (for example between 1989 and 2016, 53% of bank branches were closed).

1.110 Recent studies also show that cash withdrawals are falling by 6% each year with up to 250 free cash machines being removed each month in the UK. In summary, it is clear that the way we pay for goods and services is changing.

1.111 As well as those who cannot or choose not to use anything but cash, it could be argued that small businesses may be disadvantaged by having to take electronic transactions in response to consumer demand.

1.112 Electronic transactions made by debit and credit cards incur a clearance fee, which is paid by the vendor. The use of cash requires far more banking infrastructure to administer, and also denies fees to the clearance companies. These fees are paid by the vendor (who you might imagine increase prices to compensate at the potential expense of consumer

[11] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/715742/HMRC-measuring-tax-gaps-2018.pdf

demand) and therefore an additional cost is incurred by the business – it should however be recognised that using cash may also attract costs to business such as theft, and time lost due to additional accounting needs and transportation for example.

1.113 The arguments in favour and against moves towards cashless need to be tempered with the fact that it has not stopped many entrepreneurial individuals, from buskers to street food vendors, from dealing not only in cash but also accepting contactless payments as well.

1.114 Although it might be hard to imagine a society where cash is completely redundant, and it seems likely that cash will remain the option of choice for some, the evidence suggests that cash is less of a necessity than it has ever been before and there is a push from the financial sector to make it even less so.

1.115 This is an issue for HMRC in continuing to ensure that they meet the demands of all taxpayers in terms of the service taxpayers can expect. The OTS believes that much more needs to be done to understand how tax will be administered in the most efficient way while accounting for the increasing number of ways in which people transact in goods and services.

1.116 Further work on the opportunities and risks for tax administration presented by the increase in electronic transactions should be undertaken by the OTS.

Digital exclusion

1.117 The concerns over how a cashless society may marginalise sections of society are an indicator of a broader concern that people, most likely to be the poorest and/or most vulnerable, are not benefiting from advances in technology because they feel excluded from it.

1.118 In a HMRC report published in 2015[12] a person is defined as being digitally excluded by

> 'having no use of the internet – predominantly because of a lack of access at home (or in their place of work for businesses), or for a small minority because of no use despite having access.

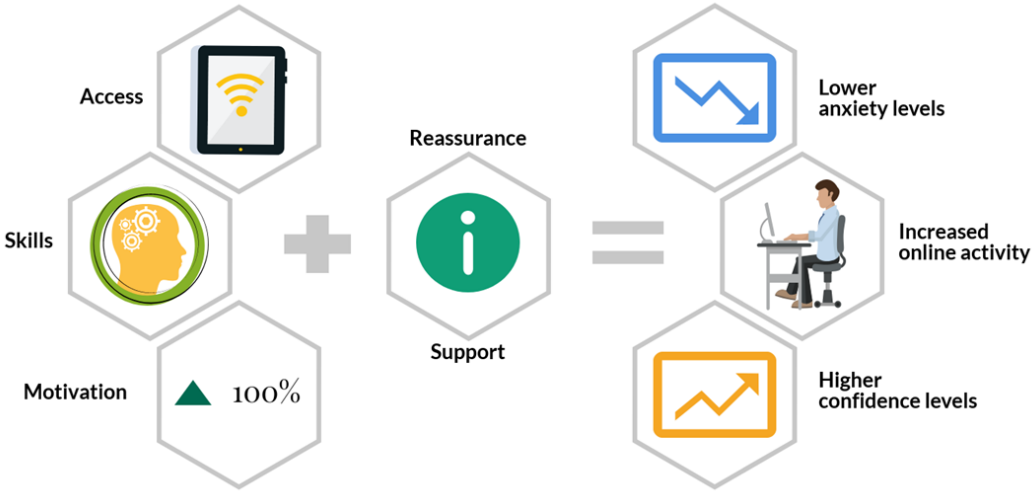
1.119 In 2017 HMRC published research[13] on the use of the Personal Tax Account and stated that 'around 10 to 15% of the overall HMRC customer population is digitally excluded'. HMRC also found that the reasons why people are digitally excluded are varied, but broadly they can be categorised under three main headings:

12 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/457800/Digital_Exclusion_and_Assisted_Digital_research_publication_report.pdf

13 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/726978/Personal_Tax_Account_Research.pdf

- access – caused by issues including limited or no broadband availability and costs, for example of purchasing hardware and/or software, and paying for internet access itself
- skills – people might have access to the physical tools to enable them to connect to the internet, but do not know how to use it or are unable to carry out basic tasks such as providing information or making an online purchase
- motivation – this is considered a key factor in those who are digitally excluded as they often make no efforts to improve their digital skills and have no interest in doing so

Chart 4: Factors of digital exclusion



Source: OTS

1.120 A lack of one or more of the three headings can result in low levels of confidence in trying to use any type of online service, and can also result in a greater level of dependency on wider assistance (for example from friends and family) to enable any kind of digital inclusion. This could for example be in the form of borrowing a laptop, or having someone explain a process or sit and work through an online form alongside them.

1.121 HMRC recognises this group of people as 'Assisted Digital' and expects they will, alongside the digitally excluded, require some level of assistance to engage with government online. HMRC's research also found that Assisted Digital customers had lower confidence levels and higher anxiety due to a perceived burden and a general lack of knowledge and experience of online interactions.

1.122 Digital exclusion is not an issue confined to the administration of tax, but is a far wider problem that is recognised as existing across society. Looking at the UK population as a whole, in 2018 the ONS estimated that around 4.5 million people in the UK had never used the internet, of whom most were older than 75. In comparison, of adults aged 16 to 24, 99% were recent internet users.

1.123 The ONS figures also show that over 11 million adults lack basic digital skills, such as being able to complete online forms or re-locate websites.[14] This should be considered against the rise in the use of mobile devices with significant numbers of adults now relying on smartphones and tablets to access the internet.[15] So, as the opportunities for those who are comfortable accessing digital services expand, will this amplify feelings of exclusion for those who do not or cannot access digital services?

1.124 The government has taken action to try and reduce digital exclusion through, for example, significant funding to improve infrastructure including the availability of superfast broadband across the country.

1.125 In March 2017 the government published their digital strategy which includes the aim to increase digital inclusion by giving everyone access to the digital skills that they need. In addition, local authorities have stepped up efforts to engage people in improving their understanding and use of technology in not only managing their daily affairs, but also in recognition of the benefits new technology can have, for example, in fostering social interactions and saving money.

1.126 This is an area which is also increasingly being tackled by the private and third sectors as more of their products and services also go online or become available through phone apps. Banks, large corporations and charities have all launched programmes to try and increase access and digital skills across all ages and parts of society.

1.127 Whilst the ONS figures suggest that year on year the numbers of people not using the internet is falling as inclusion increases, there are still a very large number of people who either cannot or do not want to become digitally aware. So, for all government services alternative avenues of contact between the taxpayer and government will need to remain in place for the foreseeable future, alongside adequate support for those who need it.

Key finding 6: Government should consider active monitoring of the impact of moves towards a cashless society and risks of digital exclusion.

International lessons

1.128 Many countries have or are seeking to digitise tax administration to some extent. From Argentina to South Korea governments have sought to improve their tax administrations and taxpayer interaction while looking for efficiency and cost savings. Broadly it appears the impacts have been:

1.129 Advantages:

- increased efficiency, effectiveness and fairness of tax collection and reduced cost of compliance
- reduced paper based administration

[14] Statistics from Office of National Statistics ("ONS"), Internet users in the UK: 2018 (31 May 2017), available at https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2018

[15] Ofcom, Adults' Media Use and Attitudes Report 2018 (25 April 2018), available at https://www.ofcom.org.uk/__data/assets/pdf_file/0011/113222/Adults-Media-Use-and-Attitudes-Report-2018.pdf

- real time or near real time audits, risk assessments and compliance
- reduced tax evasion
- reduced cost of compliance

1.130 Disadvantages:

- high initial costs, including training and hardware
- initial cost on taxpayers to transition into new system
- cyber security and identity theft
- system failure
- digital exclusion

1.131 One of the most impressive digitised tax services in the world today is that of South Korea, with their 'Tax Integrated System (TIS)' for administration and 'Hometax' for taxpayers.

1.132 TIS is a core IT system that collects/utilises third party data and taxpayer transaction information, and processes information relevant to tax return filing, tax audits and tax collection supporting tasks related to the administration of taxes, operation of other IT systems and receives/sends data to and from third parties.

1.133 Hometax is a one-stop online tax service that enables taxpayers to file tax returns, pay taxes and receive tax related certificates at home or office without having to visit a tax office. Hometax enables:

- electronic filing of tax returns for 13 tax items including corporate income tax, individual income tax and VAT
- electronic notice of assessment
- electronic transfers for payments of all types of national tax
- electronic issuance of tax-related certificates
- past filing and payment records
- automatic calculation of taxes - Taxpayers can use the automatic calculator for computing capital gains tax & gift tax and check their eligibility for capital gains tax exemption

1.134 There is also a Hometax smartphone app where many services are available. The online services are used extensively by South Korea.

1.135 The impact of this digitisation has been significant, leading to 80% of VAT returns, 90% of individual's income tax returns and 97% of corporate income tax returns are done online, and 73% of certificates are issued online. Compliance costs have also gone down by almost £5 billion, and increased work efficiency by 40%.

1.136 These results are impressive and there may be opportunities for lessons to be learnt as HMRC continues to move towards a world class digital tax administration. The OTS is reassured that HMRC keep close tabs on the

innovations being introduced in other jurisdictions and fully supports their efforts to continue to do so.

Next steps

1.137 The OTS will continue to look into the role of technology in tax simplification, and will look to:

- gather further evidence of the role of technology and public perceptions of it through the publication of an online survey in due course
- publish a follow up to the paper published in July 2018 on the platform economy, considering in more detail the concept of introducing withholding tax regimes for the self employed in the platform economy

Annex A

International public sector use of blockchain technology

Chart A.1 Blockchain in the public sector, as of March 2017

Blockchain experiments in the public sector are accelerating globally, with a concentration in the US and Europe.

Top 10 most active public sector use cases*

1. Digital currency/payments
2. Land registration
3. Voting (elections)
4. Identity management
5. Supply chain traceability
6. Health care
7. Voting (proxy)
8. Corporate registration
9. Taxation
10. Entitlements management

* Measured by observing the number of public sector blockchain experiments planned, in progress, or stalled globally

Color coding key

- In progress
- Planned
- Announced

Source: Deloitte analysis in conjunction with the Fletcher School at Tufts University.