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MTD for VAT

Evaluating Making Tax Digital's impact on record-keeping behaviour and scope for error among small businesses.

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Disclaimer: The views in this report are the authors' own and do not necessarily reflect those of HM Revenue & Customs.

Contents

Glossary of terms

Application Programming Interface (API):
The mechanism by which VAT data held in software is submitted to HMRC systems.

Automatic bank reconciliation:
A function available with some banks and software that automatically compares a bank statement or bank account with the records stored in accounting software.

Bridging software:
An additional software programme that takes data from another piece of software (e.g. a spreadsheet or legacy software) in a format that enables the VAT return to be submitted to HMRC via an API. It does not deal with any of the other requirements of MTD for VAT such as digital record-keeping. Some bridging software is free of charge, some free for a limited period of time, some charge by use, others charge a monthly subscription or license fee.

COM-B framework:
COM-B stands for Capabilities, Opportunities, Motivations and Behaviour. It models behaviour as a result of the interaction between mechanisms that enable, allow and encourage/discourage that behaviour.

Digital link:
A means by which the electronic transfer or exchange of data between or within software programmes, products or applications is achieved.

Error:
This includes mistakes concerning input and calculation of figures, setup of digital links, and failure to take reasonable care, for example, by not accounting for all invoices or receipts.

Fully automated businesses:
This refers to businesses which have established digital record-keeping, software use and full digital links for their VAT processes.

Full mandation:
Full mandation will come into effect after the end of the soft landing period. At this point, full digital links will be a requirement under MTD.

Hard check:
A hard check involves making sure that figures and calculations are exactly correct, for example, by working through the calculations step-by-step and/or multiple times.

Legacy software:
Accounting software packages, often downloaded onto computers and systems, which predate MTD for VAT and so do not provide access to the MTD API platform.

Making Tax Digital for VAT (MTD for VAT):
Making Tax Digital (MTD) for VAT is the strategy through which HMRC aims to transform the tax system. It requires VAT-registered businesses with taxable turnover above the VAT registration threshold to keep records in digital form and file their VAT returns using software.

Partially automated businesses:

This refers to businesses which have established digital record-keeping, software use and digital links to a large extent, but retain elements of manual input.

Sales structure:

Simple sales structures involve minimal exemptions or adjustments to the VAT figures, whilst complex sales structures may require various exemptions or adjustments to be made.

Soft check:

A soft check involves making sure that figures and calculations look sensible, without making sure they are exactly correct.

Soft landing period:

A period of time allowed by HMRC for businesses to put in place digital links between all parts of their functional compatible software. It lasts for the first year of mandation, during which time businesses are not required to have digital links between software programmes. There is one exception: there must be a digital link between bridging software used solely to submit data to the MTD API platform and the software used to keep digital records and/or create the figures for the VAT return, even during the soft landing period.

Third-party (commercial) software (for VAT):

Commercial software products which fully meet MTD for VAT requirements for digital record keeping, digital links and submission to the MTD API platform.

Transferring spreadsheet data:

The act of moving or uploading data saved in spreadsheet format from the business's device or network drives onto the additional (bridging) software used solely to make MTD-compliant submissions. This is a separate process which happens before the additional (bridging) software submits the data to HMRC via the MTD API platform.

1.   Executive summary

HMRC is transforming the tax system. Making Tax Digital (MTD) aims to provide a modern digital experience for businesses. It will support those who want to pay the right amount, provide services that are more focused and personalised, and move payment closer to the point of transaction. MTD for VAT requires VAT-registered businesses with a turnover of over £85k to keep records in digital form and file their returns using software. This allows businesses to collect and process information close to real-time, giving them greater certainty and helping them budget more effectively. These changes in record-keeping and the use of software to calculate and submit VAT returns are intended to reduce scope for error. An expected outcome of the reduction in scope for error is increased tax revenue.

HMRC commissioned qualitative research to help understand the behavioural impact of MTD for VAT on record-keeping and scope for error. Sixty depth interviews and observations were carried out with small businesses that had switched to an MTD-compliant approach for VAT.

Overall, we found that scope for error was reduced for these businesses after the introduction of MTD, providing a theoretical basis for MTD delivering additional tax revenue.

Before the introduction of MTD, the processes used by the businesses we interviewed generally involved manual input and calculations, and businesses kept physical copies of records. These tasks were time consuming and were completed all at once at the end of each month or quarter. A hard check of figures was conducted to account for everything, although motivation for such an in-depth check was limited.

Once businesses were mandated to join MTD, three main responses to MTD for VAT were found:
- **Fully automated:** These businesses were fully digitally linked, and automated as much as they could. They tended to be confident in book-keeping, positive towards change, time-poor, have close third-party relationships, and have high digital capability.
- **Partially automated:** These businesses were fully digitally linked but retained some manual processes to maintain a sense of control. They tended to have high book-keeping capability, be sceptical towards technology, and to have a digitally capable accountant.
- **Using additional (bridging) software solely to make MTD-compliant submissions:** These businesses tended not to fully link their processes and were keen for MTD to have minimal impact on their VAT processes. They were comfortable with their current processes and lacked the motivation, skills, resources and/or networks to make wholesale change.

There were key differences in how each of the three groups approached MTD in terms of digital record storage, daily management, and levels of input or manual calculation. Fully automated businesses stored their records within their third-party software with fully digitally linked data capabilities activated. Manual data entry was minimised and information from bank accounts was automatically reconciled through data linkage. Within the software they input data on a daily basis and could automatically calculate figures for a VAT return. This real-time management reduced time pressures associated with record-keeping. This resulted in regular soft checks of their VAT data to identify and address any discrepancies, alleviating the pressures of retrospective in-depth checks. These businesses were more positive towards VAT after the introduction of MTD.

It was a similar picture for partially automated businesses. However, they kept some processes manual, such as the inputting of receipt data or checking and reconciling information with their bank account. There were various reasons for doing this. Some had software or bank accounts that were not equipped for automatic bank reconciliation, some required exemptions and adjustments to be made that could not be automated by software, and some chose to retain a sense of control until they were confident in their setup. These businesses maintained manual checking and sometimes ran their current and previous systems in parallel to be sure the software was right.

Businesses using additional (bridging) software solely to make MTD-compliant submissions had not fully linked their data or automated processes. They consciously tried to keep their processes as similar as possible to what they had done previously. The main change was from manual input on gov.uk to transferring their data stored in a spreadsheet into the additional (bridging) software used solely to transfer and digitally submit their VAT return to the HMRC's MTD platform by API.

We found that MTD for VAT has reduced scope for error among the businesses interviewed with full digital links, potentially leading to additional tax revenue. Partially and fully automated businesses felt they had been affected by the following:
- Input errors were reduced. Digital linking and automation meant that data either only have to be input once, or are automatically pulled onto software.
- Returns were more accurate, with everything fed into software daily. This made it easier to account for everything and include all records in a VAT return.
- Miscalculation errors were reduced, with figures calculated automatically via software.
- They were able to correct errors quickly and easily. This was because frequent input, automatic bank reconciliation and easy-to-use software meant they could manage finances daily and in real-time, making errors easier to spot and their source easier to determine.

Fully automated businesses were more positive about MTD because of time saving, which gave them the resource and motivation to check for mistakes, discrepancies and inaccuracies. They also sought help with the MTD transition from a network of book-keeping and digital specialists as required. Partially automating processes meant businesses could improve accuracy by balancing the automation of repetitive processes and maintaining an element of manual control. This meant they reduced the risk of input error whilst accounting for all records and running hard checks to ensure accuracy, though some risk remained due to the retention of some manual input.

There was a risk of using software incorrectly. Those fully automating their processes risked over-reliance on software, so were less inclined to thoroughly check that their figures were being calculated as expected. More advanced software had functionality to mitigate these risks through in-built flagging.

Businesses using additional (bridging) software solely to make MTD-compliant submissions continued to manually input, calculate and store records physically. These records were manually input into a spreadsheet at regular intervals: weekly; fortnightly; monthly or quarterly, according to individual preference, which meant a risk of mislaying invoices and receipts remained. The scope for error remained similar, but the focus had changed. Transferring records from a spreadsheet to the additional (bridging) software increased risk if this digital link was not set up correctly or the additional (bridging) software was still under development which could lead to digital links being inadvertently 'broken' or overwritten. However, not directly inputting data into their government gateway account reduced risk. This group tended to lack confidence and capability in using software, so were frustrated with the changes caused by MTD. This meant they were either too fatigued to check thoroughly, increasing the chance of a mistake, or were fearful of consequences, so took extra time and care. To migrate to full digital links, these businesses need to be made aware of the simplicity and time saving this could bring.

2. Introduction

2.1 Background and context

Making Tax Digital (MTD) is central to the transformation of the UK tax system for business customers. Making Tax Digital (MTD) aims to provide a modern digital experience for businesses to support those who want to pay the right amount, provide services that are more focused and personalised, and move payment closer to the point of transaction.

Under MTD, VAT-registered businesses with a turnover of over £85k are required to keep their records digitally and submit VAT returns using compatible software. One objective of making these changes to record-keeping requirements was to reduce scope for error. HMRC anticipated that, if successful, reducing scope for error could generate additional tax revenue. This mechanism is illustrated by the logic model in Figure 2.1. Additional tax revenue is a logically assumed outcome of reduced scope for error, which is in turn enabled by automation and digital record-keeping.

Figure 2.1: *MTD for VAT behaviour change logic model*
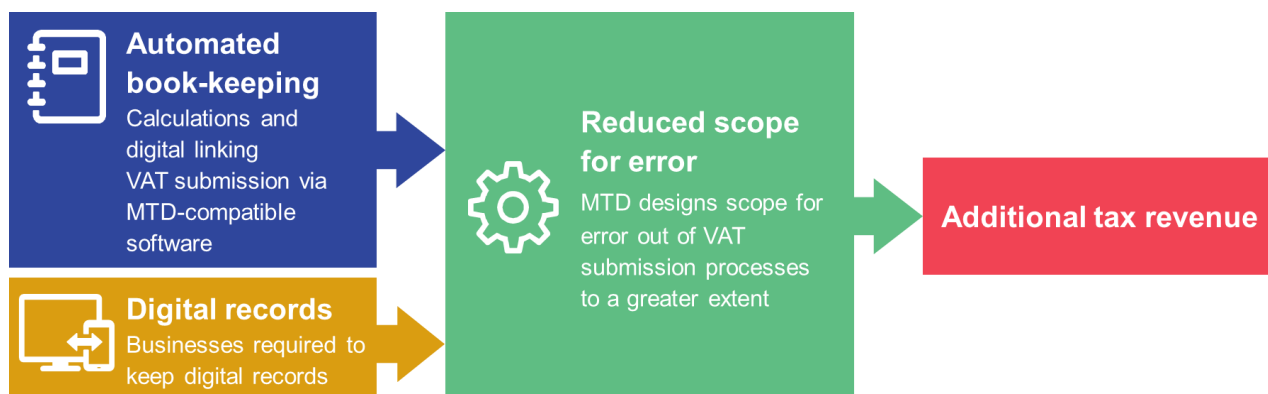
There are inherent difficulties in measuring additional tax revenue due to the difficulty in isolating the impact of MTD for VAT from other factors. Qualitative research was commissioned to help isolate and understand the effects of MTD by exploring how businesses have changed their record-keeping practices, evaluating the impact of these changes on scope for error, and by extension considering whether MTD for VAT can deliver additional tax revenue. The research did not seek to estimate the scale of the impact of MTD on additional tax revenue or identify specific errors which did not occur as a result of MTD. Instead it sought to determine whether the behaviour change driven by MTD had reduced scope for error, and therefore by extension, whether MTD has the potential to deliver additional tax revenue.

2.2   Research objectives

This research was needed to provide evidence on how MTD for VAT has changed record-keeping behaviours in order to examine how these changes have reduced scope for error, and by extension whether MTD can deliver additional tax revenue. The research was intended to demonstrate whether or not MTD for VAT has the potential to drive additional tax revenue by:

- Exploring in detail how businesses have changed their record-keeping practices;
- Examining how these changes have reduced the scope for error;
- And, by extension, implicitly explore whether there is scope for MTD for VAT to deliver additional tax revenue.

To answer the overarching aims the research looked specifically at differences in processes before and after the introduction of MTD for VAT using the following research questions:

- How are businesses meeting their MTD for VAT obligations in relation to record-keeping?
- What are the key differences for businesses in their approach to record-keeping compared to their pre-MTD for VAT approach?
- To what extent do these changes in record-keeping behaviours mean that scope for error is 'designed-out' of businesses' tax processes? Can we link this to additional tax revenue?
- Do businesses perceive that the information underpinning their VAT returns is more accurate under MTD for VAT? Can they pinpoint changes in their record-keeping practices which caused this increase in accuracy and reduction in error?
- Are businesses using full digital links during the soft landing period? If they are not, what might encourage them to do this in good time to meet MTD for VAT obligations?

2.3   Methodology

Qualitative research was used to detail the steps small businesses took when approaching VAT before and after the introduction of MTD for VAT. This approach relies on a combination of immersive research techniques (described below) and detailed discussions with relatively small sample sizes, so is not statistically representative.

Sixty in-depth face-to-face interviews were carried out by members of the Ipsos MORI research team with small businesses who had made the switch to an MTD-compliant approach for VAT in the past six to eighteen months. Fieldwork took place between 7th October and 5th November 2019. The interviews lasted approximately one hour.

Participants were interviewed at their place of work to observe their working environment and current processes for meeting their tax obligations, take photographs and observe how they interacted with their current software. Participants were encouraged to put together maps of their previous and current processes to allow a clear comparison to be made between pre- and post-MTD behaviours. By visiting participants' premises and creating these process maps, the changes could be drawn out and observed in greater detail.

Participants were recruited from two sources: 38 participants were recruited from a sample of MTD-mandated businesses provided by HMRC, and 22 through free-find recruitment. Participants were recruited using purposive sampling. Key criteria were set and participants were recruited according to these using a screener to ensure different types of change and process were reflected in the sample. The sample achieved was as follows:

Sample criteria	Sample sub-categories	60 depth interviews
Business size	Sole-trader	9
	Micro – 1-9 employees	38
	Small – 10-49 employees	13
Previous record-keeping method	Paper (predominantly)	16
	Spreadsheet	30
	Software	14
When did they switch to an MTD-compliant approach?	Past 6 months	8
	Past 6-12 months	44
	Past 12-18 months	8
Software type	Additional (bridging) software	17
	Digital software	43
Digital confidence	Confident	51
	Not confident	9
Confidence approaching VAT	High	49
	Low	11

Secondary quotas were also set on number of years trading, sector and region.

Within the sample, there was variation in software functionality, software cost, and the use of agents:

- **Functionality:** Software functionality ranged from extensive (capable of full digital links, including automatic bank reconciliation) to moderate. There were also instances of businesses having software with extensive functionality but using only a subset, for example, only using the software to transfer data from a spreadsheet to the HMRC MTD platform via API to make MTD-compliant submissions.

- **Cost:** Free software was not widely used among the businesses interviewed. Monthly subscriptions emerged as the most common form of payment.
- **Use of agents:** Use of agents ranged from close, frequent contact with accountants or tax agents (such as for software recommendation, setup, supervising the first few VAT submissions under MTD, and checking), to no contact at all.

The variation in sample ensured a mix of small business experiences and perspectives. A detailed analysis of this variation and its impact on behaviour in relation to MTD, scope for error, and driving additional tax revenue, falls outside the scope of this research.

3.   Findings

This chapter presents qualitative findings on how MTD for VAT has impacted businesses' behaviour towards VAT record-keeping and submission processes. It firstly looks at how businesses are meeting their MTD obligations, and the factors influencing the changes they made. Their pre- and post-MTD record-keeping and submission processes are then compared, and key differences highlighted. The impact of these changes on scope for error is then discussed to see if there is potential for additional tax revenue. It is highlighted where businesses believe accuracy has improved and scope for error has reduced. Finally, businesses that are fully automated, partially automated or using additional (bridging) software to make MTD-compliant submissions are compared to determine what might encourage greater automation.

3.1   How businesses have responded to MTD requirements

This section explores how businesses approached changing their behaviour for MTD for VAT and the factors that influenced them to do so. We will first briefly describe what businesses did before the introduction of MTD when preparing and submitting their VAT returns and introduce the three approaches that businesses took to the meet the requirements of MTD. We will then introduce the COM-B framework used to examine why businesses chose the approach they did.

3.1.1 Pre-MTD and the three approaches taken by businesses to meet MTD requirements

The general picture, as reported by the businesses we interviewed, was that their processes for preparing and submitting their VAT returns before the introduction of MTD were highly manual. This meant physical record-keeping, manual data entry into ledgers and/or spreadsheets, and calculations carried out predominantly by calculator. The processes will be described in greater detail in Section 3.2.1 below.

It should be noted that around one in four of the businesses we interviewed were already using third-party legacy software before the introduction of MTD. Their processes were consequently less manual before the introduction of MTD. Legacy software was normally installed onto a computer or server and tended not to be cloud-based. MTD for VAT saw many providers of legacy software to develop cloud-based options with API functionality that could digitally link to the HMRC MTD API platform. Some businesses using legacy software transitioned to this MTD-compliant cloud-based software, while others continued to use legacy software and instead opted to use additional (bridging) software solely to make MTD-compliant submissions.

We identified three possible approaches to meeting MTD requirements, which we will call **fully automated, partially automated,** and **using additional (bridging) software solely to make MTD-compliant submissions:**

- **Fully automated:** Businesses automating their VAT processes to the fullest possible extent and keeping their records digitally on MTD-compliant third-party software.
- **Partially automated:** Business partially automating their processes, maintaining some manual input, and keeping their records digitally via MTD-compliant third-party software.
- **Using additional (bridging) software to make MTD-compliant submissions:** Businesses kept their previous processes largely unchanged and used additional (bridging) software to submit their VAT returns via the MTD API platform.

These approaches will be described in greater detail in Section 3.2.

3.1.2 Drivers of behaviour change

To understand why businesses chose the approach to MTD that they did, we will use the COM-B framework.[1] This framework models behaviour and behaviour change as a result of the interaction of three factors: **capabilities** (the psychological or physical ability to enact a behaviour); **opportunities** (the physical and social environment in which a behaviour can take place); and **motivations** (the reflective and automatic mechanisms that activate or inhibit behaviour). This is illustrated in Figure 3.1.

Figure 3.1: *The COM-B framework[2]*
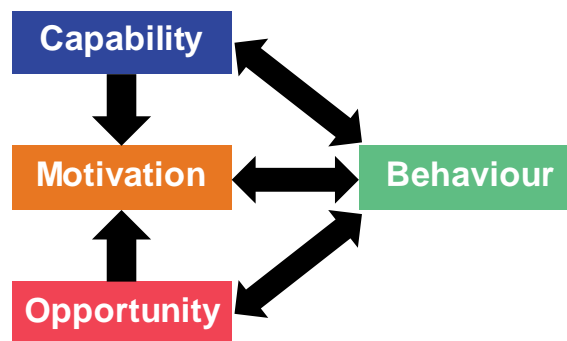
The **capabilities** that influenced a business' choice of approach to MTD seemed to fall into two broad areas:

- **Book-keeping capabilities:** accountancy skills, including the ability to store, organise and keep track of records; use of robust, consistent and accurate

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[1] Michie et al. (2011)
[2] Michie et al. (2011)

calculation methods; and management of data entry and data transfer. In our interviews, those with greater book-keeping capability also tended to have at least a reasonable understanding of accountancy terminology, but further investigation would be required to establish whether this had an impact on behaviour change.

- **Digital capabilities:** computing skills, including the ability to use software and technology.

The **opportunities** that influenced a business' choice of approach to MTD were as follows:

- **Accountant's digital capability:** the availability of an accountant who could advise on and assist with accountancy software and associated software functionality, including choosing, setting up, using and checking the software.
- **Resources:** the availability of contacts, time and money, including opportunities to consult or hire more expert staff to help with book-keeping or use of software to upskill the business.
- **Sales structure:** in the present context this refers to the proportion of VAT adjustments or exemptions that a business might have to make. Those with more complex sales structures have a higher proportion of adjustments or exemptions, compared to those with simpler sales structures.
- **Time since adopting an MTD-compliant approach:** the time that a business has had to make and embed any changes to their VAT processes as a result of the introduction of MTD.

The **motivation** for a business to change seemed to be influenced by three overarching factors:

- **Confidence:** this refers to confidence and trust in book-keeping capabilities and digital capabilities.
- **External relationships:** feeling comfortable that there would be people outside the business who could provide advice, support and encouragement for any changes made as a result of MTD**.**
- **Attitude:** people's thoughts and feelings towards change, particularly regarding digitisation.

3.1.3 Drivers of change by group

This section discusses how the interaction of the various capabilities, opportunities and motivations has influenced businesses to choose one of the three approaches to MTD: fully automated, partially automated, and additional (bridging) software to make MTD-compliant submissions. Not all drivers were present for all members of each group; this simplification is to enable analysis.

Fully automated

One of the core objectives of MTD is for businesses to automate their book-keeping and digitise record-keeping. Businesses choosing to fully automate their processes seemed to

be moderately to highly confident in book-keeping, time-poor, have close relationships with accountants and technology experts, and have already digitised large parts of their business. They used software with greater functionality.

- **Capabilities:** They had high digital capability. They had digitised most aspects of their business and were often already using third-party software. If previously using spreadsheets, they were able to learn to use the software quickly. However, they only had moderate book-keeping capabilities, even though they were highly confident. This meant they were less aware of the risk of an inaccurate VAT submission caused by incorrect setup or not monitoring automated book-keeping.
- **Opportunities:** Businesses fully automating processes often had a digitally capable accountant to help guide them or were able to train and hire new staff to help embed new processes. There were also businesses in this group that had fully automated their processes before the introduction of MTD in April 2019, which meant they had had time to fully migrate systems. They also tended to benefit from a sales structure with minimal exemptions and adjustments to VAT.
- **Motivations:** They were highly motivated to change their processes. They had a positive attitude towards change and a desire to save time which they could invest in business development. They were highly confident in their ability with technology and book-keeping, making it easier for them to transition. Accountants, with whom they had a close relationship, encouraged and helped them to change.

    "My son works for the business and he said to me we should have tablets when we're in the field… I can't tell you how it's integrated things. It's allowed us to take signatures and invoices on-site."
    Previously used paper

Partially automated

This group had full digital links, but their scepticism towards digitisation and high confidence in their previous processes led to a desire to retain a sense of control through manual oversight and intervention. Therefore, they partially automated processes.

Like those that had fully automated their processes, partially-automated businesses tended to have a highly capable accountant with whom they had a strong relationship. However, there were different factors influencing behaviour change.

- **Capabilities:** They had high book-keeping capability. This meant they were adaptable, and able to change their processes from one software provider or spreadsheet to an MTD-compliant one. However, it also meant they were aware of risks of an inaccurate VAT submission caused by incorrect setup or lack of monitoring. Therefore, they wanted to keep some processes manual to maintain a sense of control. Furthermore, whilst their book-keeping capability was high, their confidence in their own capability was often lower. This served to strengthen their drive for accuracy.

- **Opportunities:** Though digitally capable accountants gave them the opportunity to become fully digitally linked, they had less opportunity than those who became fully automated. Firstly, they had generally switched to MTD-compliant software more recently, meaning not all processes had fully migrated. Secondly, they may have had a sales structure where a high proportion of exemptions and/or adjustments were needed, meaning the software available did not exactly meet their needs. They also did not have as much resource or access to networks to digitally upskill their businesses.
- **Motivations:** Support and encouragement from a close or trusted accountant and an openness to change allowed this group to become fully digitally linked. However, there was slight scepticism surrounding the change, and lower confidence in their digital and book-keeping capabilities. As a result, they liked to retain some element of control over the submission process, e.g. they liked to be able to see and work through calculations that would not be as transparent to them if the calculations were performed automatically by software. This encouraged them to keep a manual element to their preparations.

"At the moment I will stick with [manually] reconciling everything to the penny, just so that I can see more clearly if something is wrong on the computer."
Previously used paper

Using additional (bridging) software to make MTD for VAT compliant submissions

Bridging software is a software programme that submits data to HMRC via an Application Programming Interface (API), as required by MTD for VAT, but does not deal with any of the other requirements of MTD for VAT such as digital record-keeping. It was used typically by businesses that kept their business records and/or their VAT return information in software, such as spreadsheets or legacy software that is not or cannot be enabled for submission of data to HMRC via the API platform. Businesses were found to use three different types of bridging software:
- Software that provided options for full automation, partial automation and options to solely transfer data from non-compliant systems, such as spreadsheets, to submit to HMRC via the API platform. Purchasing the software solely to transfer and submit data was often the cheapest option. The software providers allowed businesses to transition from this cheaper option to using partial or fully automated functionality to manage their accounting data at any time.
- Software that only offered the ability to transfer (bridge) data from a spreadsheet to HMRC via the API platform for MTD-compliant submissions.
- Emerging solutions that were 'usable' but still under development, such as macro-enabled spreadsheets or 'add-ons', that made it possible to transfer data from spreadsheets to HMRC via the API platform for MTD-compliant submissions. This software was either free to use or charged by use rather than requiring a license fee or subscription, although many developers offering free emerging solutions

indicated a charge would be introduced once the software had been fully developed. As these emerging solutions were still under development it was sometimes possible to unintentionally 'break' or 'overwrite' the digital links allowing for data to be input manually before final submission to HMRC via the API platform: making the VAT submission MTD non-compliant.

Those using additional software (bridging) solely to transfer data for MTD-compliant submissions made few changes to their behaviour. This group tended to be comfortable with their current processes, and lacked the various capabilities, opportunities and motivations to make wholesale change.

- **Capabilities:** These businesses generally had low book-keeping and digital skills. This meant they were not able to easily adapt and preferred processes they were comfortable with. However, there were some with a higher level of digital skill who felt the size of their business and the small number of transactions they handled meant that wholesale change to a third-party software (moving away from their spreadsheet system) would not be beneficial in terms of time and cost. For this group, the only way to mitigate this or avoid wholesale change was through using additional (bridging) software to submit data from a spreadsheet to HMRC via the API platform (i.e. additional software was used in place of manually inputting data into the gov.uk submission form). Businesses tended to update the calculations on their spreadsheet monthly or once a quarter before using the additional (bridging) software to make their MTD-compliant submissions.
- **Opportunities:** This group tended not to have the resource or networks to digitally upskill their business and were likely to have a more complex sales structure. They also either did not have an accountant or used one with lower digital capability. This meant they did not have the opportunity to be given advice on selecting appropriate 3rd party software. However, some with higher degrees of digital confidence had a small number of large transactions and did not feel that wholesale change would be cost effective for their business.
- **Motivations:** This group were change-resistant, but for varying reasons. On the one hand, those with lower digital and book-keeping skills often lacked confidence in any processes different from their own familiar one. This gave them a negative outlook on MTD for VAT. Furthermore, they did not have strong third-party relationships to encourage change. On the other hand, some who had a high volume of business from a low number of contacts felt that wholesale change was not necessary for them and so they were not motivated to change.

    "I've got to be honest I found [MTD] a pain in the backside … Before, [it was] easier because it was done manually through the Government Gateway … Let me do it the way I want to, the way I've always done it … it's more straightforward."
    Previously used spreadsheet

Summary

This section explored the three approaches to MTD chosen by businesses that emerged from the interviews: fully automated; partially automated; and using additional (bridging) software solely to make MTD-compliant submissions. It examined the reasons for their choice and changes of behaviour in terms of the interaction of their capabilities, opportunities and motivations, as described by the COM-B framework.

Fully automated businesses kept records digitally. They were enabled to do so by high capability around technology, the availability of digitally capable accountants, having resources to upskill their business, and greater motivation and positivity towards change.

Partially automated businesses also kept records digitally. They were highly capable book-keepers and had digitally capable accountants with whom they had a strong relationship. However, these businesses' moderate digital skills and low confidence and scepticism towards technological change deterred them from fully automating processes, so they maintained an element of manual oversight and control.

The record-keeping processes of businesses using additional (bridging) software solely to make MTD-compliant submissions were more likely to remain unchanged. Paper-based records were transferred into a spreadsheet, and this spreadsheet was digitally linked to HMRC via the MTD API platform. Other than this, these businesses did not digitally link their systems, even if the functionality for full digital links was available within their software. This was because they had lower confidence and capability in book-keeping and technology and did not have access to a digitally capable accountant for help.

The next section will examine the changes these businesses made to their VAT submission process for each of the different approaches discussed above.

3.2   VAT submission journeys

This section looks at the processes that businesses carried out when preparing and submitting their VAT returns. We first describe the VAT journey before the introduction of MTD (Section 3.2.1), before describing the VAT journey for each of the three approaches to MTD: fully automated (Section 3.2.2), partially automated (Section 3.2.3), and using additional (bridging) software solely to make MTD-compliant submissions (Section 3.2.4). For each journey, we describe what the key changes have been in response to MTD and their overall impact on behaviour. Their overall impact on scope for error is discussed separately in Section 3.3. We use illustrative case studies and quotes from the interviews throughout to bring the points to life.

3.2.1 The VAT journey before MTD

The general picture among the businesses interviewed was that the processes before MTD were highly manual. Manual intervention was required in the record-keeping, data entry and calculation stages. As Figure 3.2 shows, numerous steps were involved. It should also be noted that some businesses were already using third-party software, so their pre-MTD processes were closer to the fully automated or partially automated process maps (see Figures 3.3 and 3.4 respectively below).

Figure 3.2: *The pre-MTD process map*
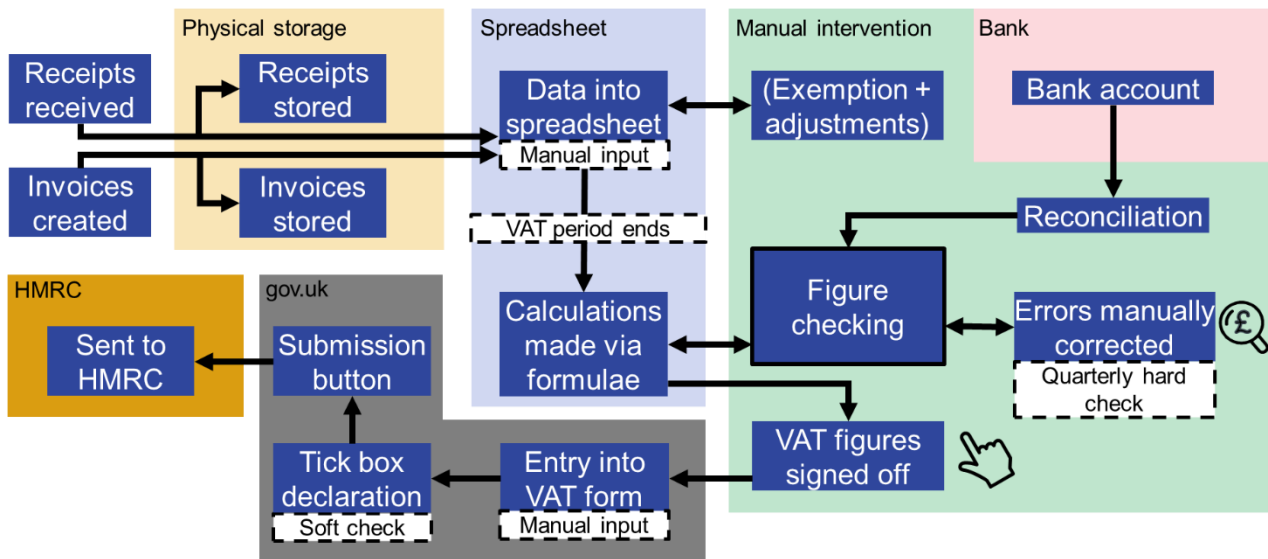
Prior to MTD for VAT, businesses tended to spend several days at the end of the quarter collating records and calculating the figures for their VAT return. They would then do a final hard check to see if calculations were correct and all records had been accounted for. The process risked error at various stages:

- **Input errors:** Participants felt several steps risked input error, i.e. entering the wrong figure into a stored record or completing the wrong box. These steps included typing individual invoice or receipt details into a spreadsheet, using a calculator, writing into a manual ledger, mis-correcting errors, and typing incorrectly into gov.uk forms.
- **Calculation errors:** Miscalculations led to an incorrect set of figures. These related to either incorrect mental calculations, usually on a paper ledger, or incorrectly setting up formulae in spreadsheets. Businesses found it challenging to identify the source of the error.
- **Sources of information:** Records were stored in multiple locations, and not linked to one another, as the process map demonstrates. This made it difficult for businesses to ensure all records were accounted for and to reconcile their receipts

and invoices with their bank account. For some businesses this was too difficult and resulted in them not having the motivation to thoroughly check.

- **Time spent compiling returns:** Businesses spent several days at the end of each month and/or quarter compiling information. Compiling information periodically made earlier errors harder to spot and correct. Intense periods of this work could negatively affect concentration and the motivation to be thorough, and could encourage complacency.

"[The previous setup] has lots of places where problems could happen … with paper bits here and bits there, there's more opportunity for errors."
Previously used paper

3.2.2 Fully automated businesses

Businesses fully automating their VAT processes had every stage of data collection digitally linked and were able to store all records in a single place via third-party software. They automated repetitive processes (leading to fewer input errors), managed finances daily and in real-time (making it easier to spot and amend mistakes), automated calculations, and upskilled their business and saved time overall.

Changes to processes

Figure 3.3 below shows what was involved when businesses prepared and submitted their VAT return pre-MTD (Figure 3.3a) and what fully automated businesses did after the introduction of MTD (Figure 3.3b). Under MTD, they managed their processes daily, spending no more than fifteen to thirty minutes transferring data into their software and checking for mistakes.

Figure 3.3: *Comparing the pre-MTD and fully automated process maps*
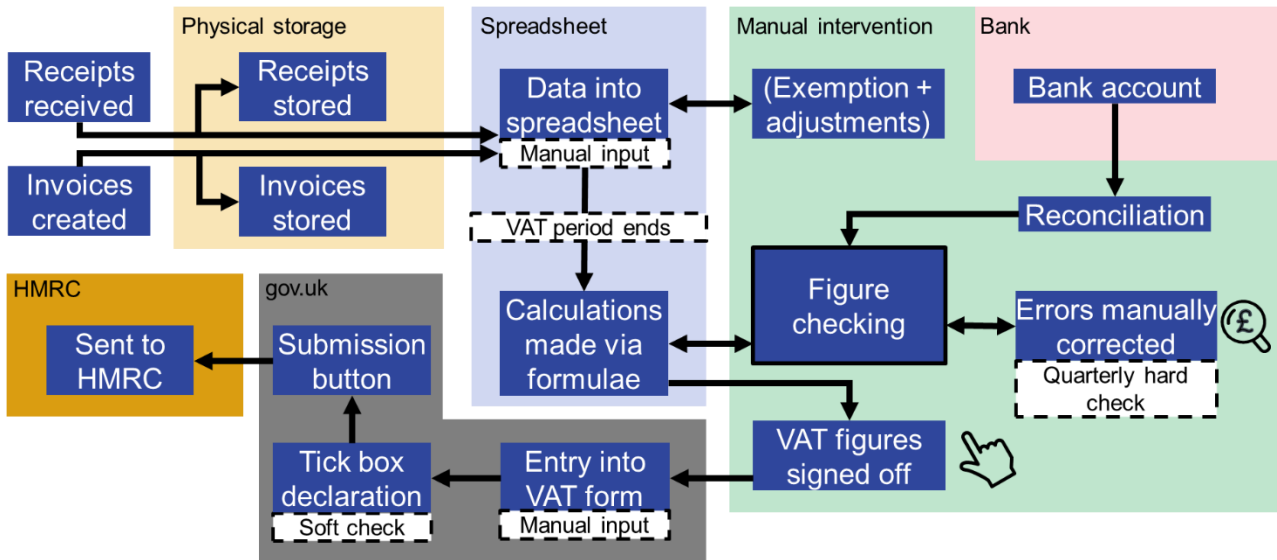
Figure 3.3a: *Pre-MTD*

Figure 3.3b: *Fully automated*
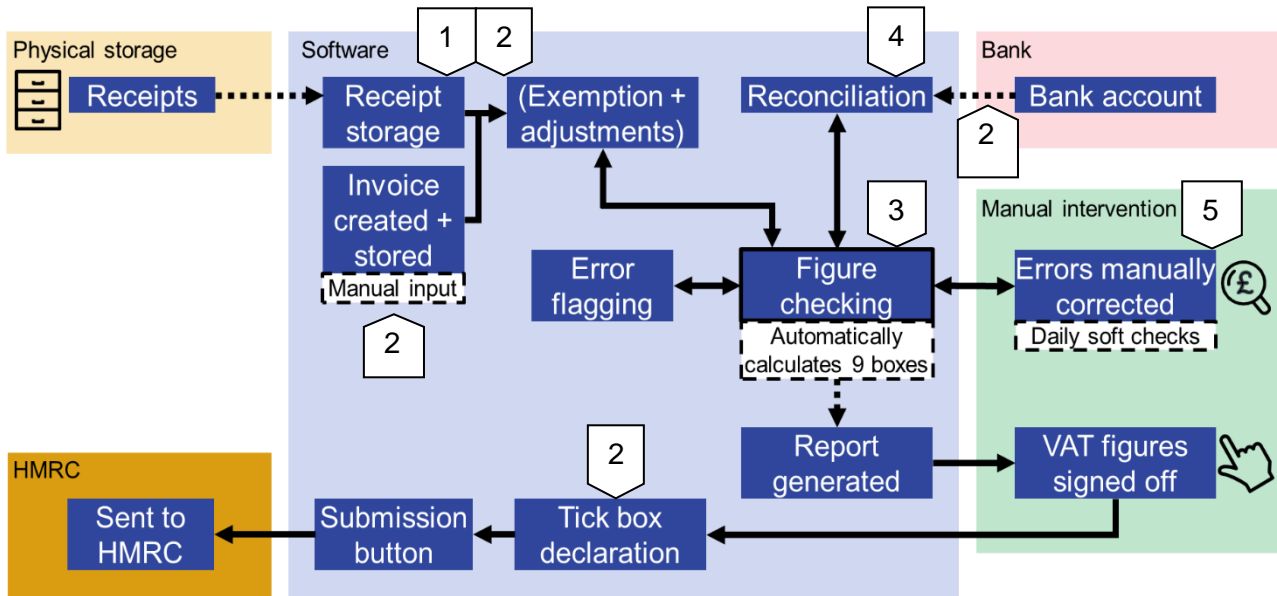
Fully automating systems reduced scope for error at different stages, though it did not eliminate all risk. Figure 3.3b shows the points where behaviour has changed (indicated by numbered markers). These changes are detailed below:

1. **Everything was stored digitally in a single place**, with no need for physical copies. Daily management made it easier to identify missing records, with businesses not needing to sift through information. This saved time and reduced the risk of losing information.

2. **Repetitive processes were automated** and there were fewer stages where input was required. They no longer input receipts (photographing them instead) or used spreadsheet formulae, and did not type into the VAT form via gov.uk. For some fully automated businesses, some manual input remained when creating invoices.
3. **Calculation of figures was automated via the software**. There was no requirement to set up formulae in spreadsheets or do mental calculations within paper ledgers.
4. **Automatic bank reconciliation**. This saved time and would ensure that data stored digitally matched with records in their bank account, with in-built checking to flag discrepancies.
5. **Checking methods had changed**. Quarterly hard checks had been replaced by daily soft checks.

Overall impact on behaviour of fully automated businesses

There had generally been wholesale change to how fully automated businesses approached VAT, though some who were already using third-party software may not have made changes to the same extent. They now managed their VAT daily and closer to real-time, implementing soft checks to assist with this and motivated by the simplicity and speed of the automated processes. This was because invoice and receipt figures only had to be entered once, or not at all, so it was easier to spot and correct mistakes at source. Participants often reported that third-party software was intuitive, easy to navigate and had dashboards that could assist with error detection, which was also observed during interviews.

> *"The great thing about [SOFTWARE NAME] is you can reconcile as you go. It shows you all the money that goes in and out of your bank account automatically and prompts you to reconcile which means that the task at the end of the quarter is less onerous."*
> Previously used software

Participants also felt that **real-time management** ensured everything was accounted for because there was no need to trace back to find missing records.

> *"As soon as you draw that information you add it in. You're adding in the invoices and you're adding in the receipts. You're adding in the details. Everything's so transparent, it's right there."*
> Previously used paper

Some small businesses **relied on technological and accounting expertise in their networks**. Well-resourced businesses were able to hire specialist staff, with two main effects identified:

- **Upskilling.** Bringing in additional staff or using wider networks helped to improve expertise within businesses, which led to upskilling, and meant an extra pair of eyes to spot mistakes.
- **Time saving**. Book-keeping specialists were more efficient and effective at record-keeping and preparing submissions. Technology specialists helped digitise businesses, leading to time saved through adapted processes (e.g. receipt scanning).

> *"Initially you have to take it on, which is a little overwhelming, but once you've gotten past the first month or two, you suddenly realise that the process of doing it is so simple, and if you have questions there are people to ask. Once you've done it once or two quarters, or a year in you're just completely in control."*
> Previously used paper

The overall change to processes **increased positivity towards VAT**, so they were more relaxed towards and felt in control of the submission process. This gave them both motivation to check, and capability to produce more accurate returns.

> *"Being forced to move onto an accounting system, it has made life a lot easier."*
> Previously used spreadsheet

It was observed that a relaxed attitude and confidence in the software could lead to **less diligence among time-poor businesses**.

> *"I might actually just look at the total value sales and work out roughly that there are no glaring errors. Actually that was something that was better with the pre-submission down time, because when I was putting them in on HMRC's website that used to bring up any anomalies. Now it doesn't."*
> Previously used software

Third-party software providers had features to help mitigate this. Higher quality, smarter, and fully functional software had **in-built flagging to detect discrepancies**. This included detecting whether items on invoices should be VAT-exempt and flagging items that did not match with bank account data.

> *"[The software is] absolutely user-friendly. I think they've gone to try and make it idiot-proof, as far as idiot-proof can go."*
> Previously used paper/accountant

Some software also forced businesses to run a VAT return report before submitting, which businesses could sense check. Errors in the setup or rules would be exposed at this stage, particularly if the business generated a higher than expected VAT bill.

Case Study – A fully automated business

A director of a small business in the retail motor industry made the switch from a paper-based VAT approach to using software. They switched to this software after a trial period.

The switch to software led to many changes in their VAT processes. Before, they would manually enter invoices and receipts into a spreadsheet, calculate their VAT figures, record figures in up to three different ledgers, and manually transfer these figures to the VAT form. Now, they now only manually input invoices and receipts. This automation meant reduced risk of input and transfer errors, reduced risk of calculation errors and reduced risk of accidental loss of records. They had started inputting invoices and receipts immediately they were received, due to the simplicity of the process. As a result, figures were stored in real-time and they could spot any obvious input errors immediately using the summary infographic dashboard. Autofill functionality also helped to mitigate the risk of input errors.

They now conducted frequent soft checks, having previously undertaken quarterly hard checks, because of their confidence in the software and delight with the time savings. In their previous approach, the director went through the figures and calculations by hand two or three times to make sure everything was properly accounted for. In their current approach, the director believed there is not much checking to be done because the software does it automatically. They now used the infographic dashboard functionality on a daily basis to ensure that figures and amounts look sensible. This allowed them to spot large errors in real-time but there was a risk that minor mistakes may be missed.

They saved time and money. The director was pleasantly surprised by how quick and easy the process was and noted that they no longer had to purchase account ledgers. The resource saved could be invested back into the business, and they felt it more than compensated for the software subscription costs. They digitally upskilled and alleviated transition anxiety via the software's online help function or through YouTube tutorials.

3.2.3 Partially automated businesses

Businesses partially automating their VAT processes had every stage of data collection linked and were able to store all records in a single place via third-party software. However, they felt the need to manually input data, carry out a hard check and adjust

records to maintain control over the process. This seemed to be because they were more risk averse than fully automated businesses, so mitigated risk through thorough and robust checking methods, with both hard and soft checks being carried out.

Changes to processes

Figure 3.4 shows what was involved when businesses prepared and submitted their VAT return pre-MTD (Figure 3.4a) and what partially automated businesses did after the introduction of MTD (Figure 3.4b). Like fully automated businesses (discussed above in Section 3.2.2), partially automated businesses managed their invoices and receipts daily and close to real-time. However, partially automated businesses maintained manual control over exemptions and adjustments, receipts and, in some cases, over reconciling figures with their bank account.

Figure 3.4: *Comparing the pre-MTD and partially automated process maps*
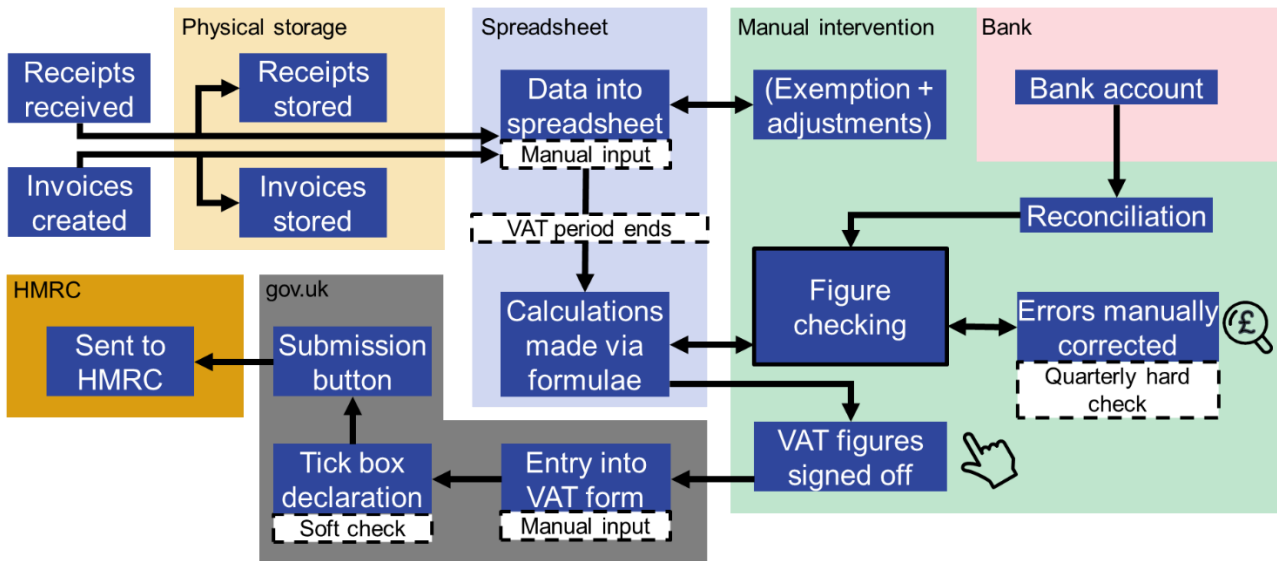
Figure 3.4a: *Pre-MTD*
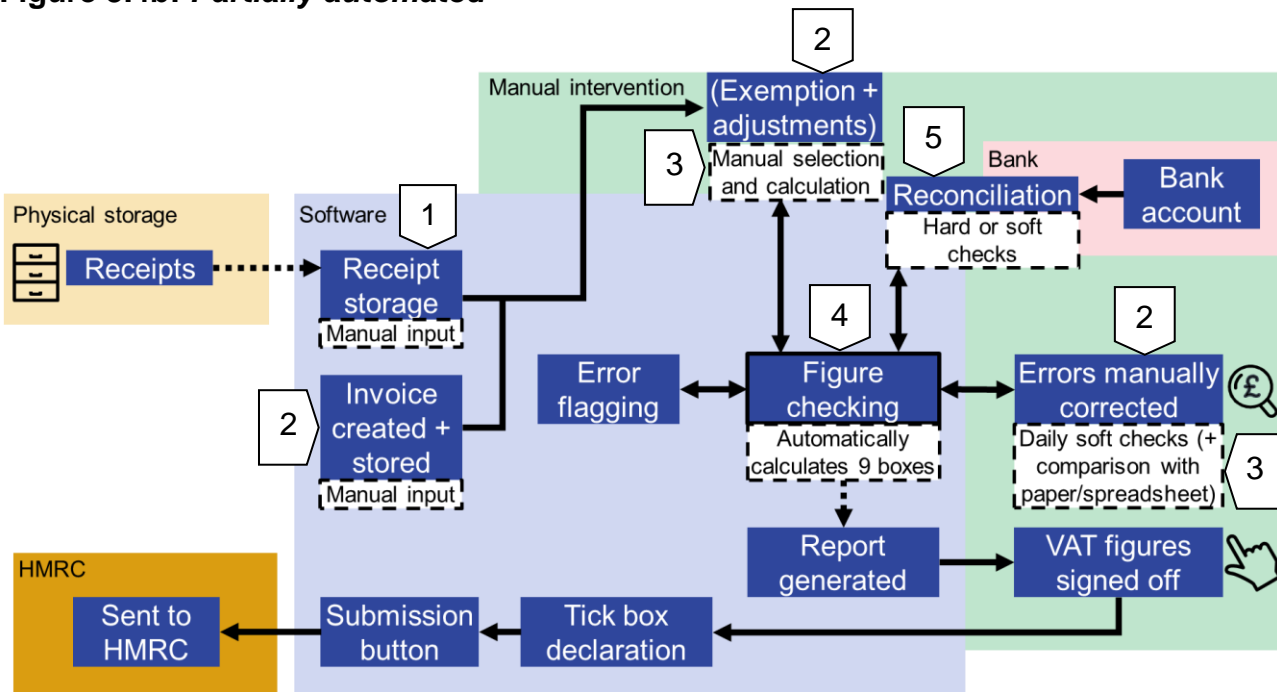

Figure 3.4b: *Partially automated*

Figure 3.4b shows the points where behaviour has changed (indicated by numbered markers). These changes are detailed below:

1. **All records were stored digitally** in a single place, with no need for physical copies. This made it easier to account for invoices and receipts and facilitated daily VAT management.

2. **Automation of repetitive processes and fewer stages where input was required.** However, there was still manual intervention for exemptions and adjustments, receipts and reconciling bank accounts.

3. **More robust checking processes with less reliance on software.** Partially automated businesses undertook soft checks like those who were fully automated, whilst maintaining a hard check when manually making adjustments/exemptions or reconciling their bank account.

4. **Calculation of figures was automated via the software.** However, they had to correctly set exemptions and adjustments to ensure correct figures were calculated.

5. **Automated bank reconciliation was mixed.** Some partially automated businesses automated their bank reconciliation, whilst others did not have a bank or software provider with that functionality. There were also some who actively chose not to automate their bank reconciliation so they could maintain a sense of control and use it as an opportunity to hard check figures.

Overall impact on behaviour of partially automated businesses

The overall experience of partially automated businesses was similar to those which fully automated their processes. They changed to real-time daily management of invoices, receipts and calculations, which resulted in time saving. However, by maintaining manual intervention, their propensity towards diligent checking behaviours and smaller networks meant the changes to processes and wider behaviour was different. These factors are discussed immediately below.

Partially automated businesses tended to **have less resource and smaller business networks**. This impacted on their ability to digitise their business and/or hire specialist book-keeping staff. This meant they did not have the same level of expertise available to help with MTD for VAT. However, these businesses seemed to have higher book-keeping capability and diligence already present within the organisation than those fully automating.

> *"You have different stages in the process when you're printing and you're forcing yourself to check before it's gone."*
> Previously used software with mix of paper and spreadsheet

> *"My accountants have made it clear, 'Please do your best to get [the software] to reconcile before you submit a return.' Otherwise, you're going to be accumulating unreconciled accounting. Eventually, it will lead to a disparity. Someone will say, 'Why's this not balancing?' That's a road I just don't want to go down."*
> Previously used paper

Their **diligent behaviour and retention of hard checking** meant issues arising through setup errors in the software would be spotted and amended throughout the VAT period. They would also have to check figures and data at manual stages of the process, such as entering invoice data or manually reconciling bank details.

It was observed (and reported) that this group's thorough checking was driven by their **concern about making errors, their consequent diligence, and scepticism of technology**. Their diligence encouraged them to have robust processes, and they were motivated to take the time to check through anything they had manually prepared. Their scepticism of technology meant they did not trust the software to get it right first time, so would check any automated processes to reassure themselves.

> *"I think I'm still nervous about it. When you don't press a button, you feel you're doing a better job, checking it more."*
> Previously used software with mix of paper and spreadsheet

This led some businesses to **run both their pre- and post-MTD approaches in tandem**. They wanted to be certain that their new approach was robust and would catch any potential errors before fully automating their processes after a few VAT submissions.

> *"Once I got past double data entry, when I was migrating from the old software, it wasn't very difficult. It's a case of learning how to adapt from one set of software rules to another."*
> Previously used software

However, not all businesses had the time to do this, but were still worried about software. They sought **help from accountants** if they could to ensure they had set up everything correctly.

> *"We have other things to do [besides VAT], we have a business to run."*
> Previously used spreadsheet

Over time, businesses expected to do away with their pre-MTD approach as they became more confident and familiar with their new approach.

Case Study – A partially automated, dual-process business

A self-employed business owner working in the entertainment industry partially automated their processes. They switched to software after several trials with software providers having previously used a non-MTD-compliant version of a different software, where records were not digitally linked.

The switch to software led to changes to their processes. The software was linked to the company website. This meant purchases made by customers on the website could be fed through automatically as opposed to being entered manually. All other expenses and sales were still entered manually. This, along with no longer entering data into the VAT return form, reduced, but did not eliminate, risk of input errors.

They automated reconciliation with their bank account. This meant they could check for data errors daily. Previously, this check had to be done monthly, record-by-record, having run a VAT return report. This helped ensure everything had been accounted for in real-time and allowed missing entries to be easily located.

Exemptions were still tagged manually. This mostly related to postage. They did not realise they could automatically tag postage using their software, as they did not have the network of digital specialists to upskill the business. However, the software had autofill functionality to help recognise a postage-based purchase to mitigate risk.

They had changed their checking processes from only doing monthly hard checks to now also doing daily soft checks. This was because they had a diligent personality and high book-keeping skills, but did not have the confidence in their software to do away with their hard checking methods. Their first software return did not correctly link to HMRC and they had experienced rounding errors with their previous software. For this reason, they ran both their previous and current processes in tandem and would continue to do so until they were confident their software was getting it right.

3.2.4 Businesses using additional (bridging) software solely to make MTD-compliant submissions made minimal changes to their approach to VAT submission

This group consisted of businesses using additional (bridging) software solely to make MTD-compliant submissions. In some instances, this also entailed the use of a transferring spreadsheet. They consciously made minimal change to how they approached VAT with their processes largely remaining the same. Data collection, storage and checking methods remained largely the same, with VAT calculations being input or calculated in a spreadsheet before using additional (bridging) software as an MTD-compliant submission mechanism that allowed data from the spreadsheet to be digitally linked to HMRC via the API platform. The use of additional (bridging) software was in effect the only new process used by these businesses to become MTD-compliant. However, the use of additional

(bridging) software combined with a poorer understanding of the purpose of MTD led to frustration among this group.

> *"My whole VAT return process, the only change has been the addition of one step ... Basically [the additional [bridging] software] is a [spreadsheet] version of the old form [on HMRC] I used to fill in."*
> Previously used spreadsheet

However, the software being used to transfer data varied both in terms of functionality and sophistication. Three subgroups seemed to emerge from the depth interviews:

- Businesses using software that offered full and partial automation as well as the option to solely transfer data from non-compliant systems, such as spreadsheets, to submit to HMRC via the API platform;
- Businesses using software that only offered the option to transfer data from non-compliant systems to submit to HMRC via the API platform; and
- Businesses using 'emerging solutions', i.e. publicly available API-enabled spreadsheets or custom-built software.

Software that offered full and partial automation as well as the data transfer functionality was product-tested and could not be overwritten by the user. Software providers offered a 'full' or 'partial' software option (with functionality to enable digital links between all parts of the VAT process), and a 'data transfer only' version (with functionality only used to transfer data in the submission part of the process, i.e. effectively this software functioned as additional (bridging) software). Some businesses purchased this 'data transfer only' version, which was often cheaper (although still subscription fee based), whilst some purchased full software but used only its data transfer functionality. Those who purchased 'data transfer only' options could increase the functionality of the software, meaning they could migrate to partially or fully automated systems at any time.

Software that only offered data transfer functionality was product-tested and could not be overwritten by the user. This software did not offer any additional functionality, but allowed businesses to continue to use spreadsheets, with payment or fees being based on a 'pay-by-submission' basis. This meant that businesses would pay on or just after submission of their VAT return.

The introduction of MTD also seemed to have created a market opportunity for more bespoke solutions to digital record keeping and data transfer. These 'emerging solutions' included add-ons to existing spreadsheet packages, macro-enabled spreadsheets, or software currently being developed and tested with businesses. These 'emerging solutions' varied in their sophistication, with the less sophisticated solutions allowing users to manually overwrite figures or to manually change formulae. Emerging solutions were often designed to attend to a specific need, such as linking the Apple Mac OS software Numbers to HMRC via the API platform, which, at the time of our research and according

to our interviewees, was not offered by the third-party software providers listed on HMRC's website. As these solutions were still in development many could unintentionally have their digital links 'broken' or overwritten allowing for manual input and rendering the software non-compliant. Emerging software was often free to use, with the understanding that, once fully developed and tested, a fee would be introduced.

Changes to processes

Figure 3.5 below shows what was involved when businesses prepared and submitted their VAT return pre-MTD (Figure 3.5a) and what businesses using additional (bridging) software solely to make MTD-compliant submissions did after the introduction of MTD (Figure 3.5b). Following the introduction of MTD, businesses using additional (bridging) software tended to continue keeping physical records of invoices and receipts and would manually enter these data into spreadsheets for digital record-keeping at regular intervals (weekly, fortnightly, monthly or quarterly according to individual preference). At the end of the quarter, these businesses then carried out their calculations and checks, using their additional (bridging) software to submit their figures from the spreadsheet to HMRC via the API platform.

Figure 3.5: *Comparing the pre-MTD and additional (bridging) software solely to make MTD-compliant submissions process maps*

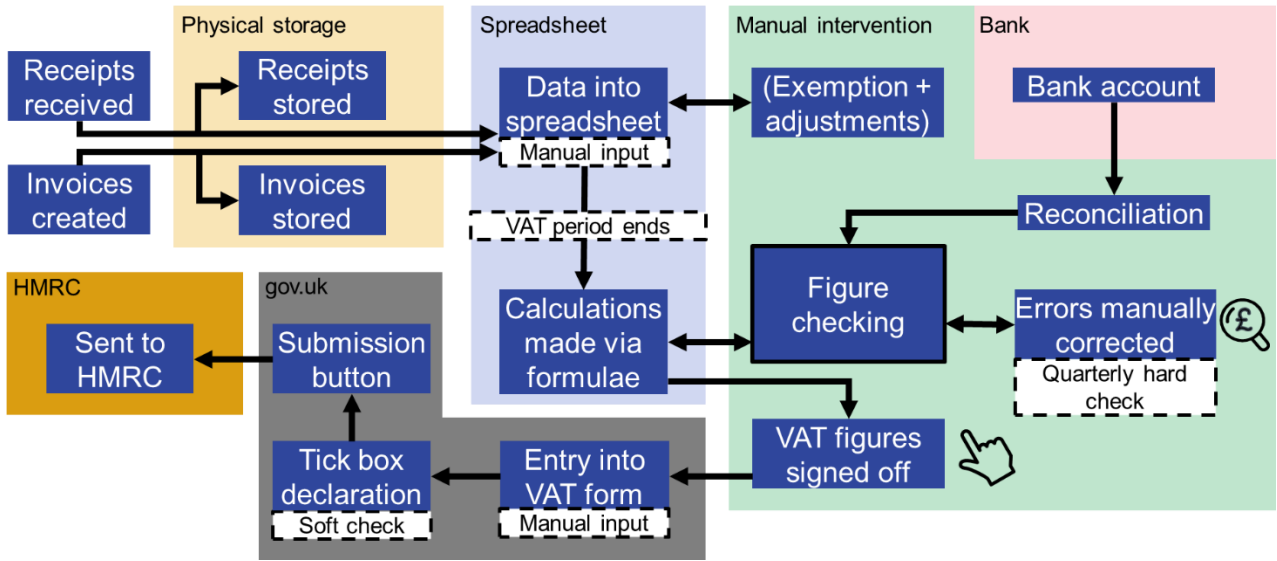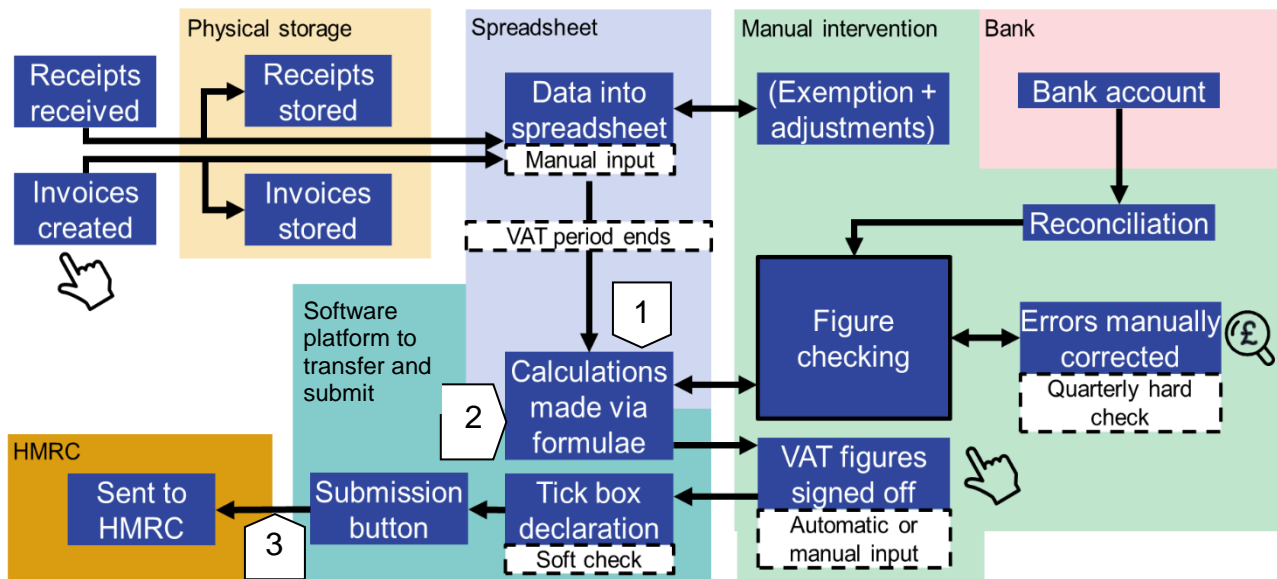**Figure 3.5a:** *Pre-MTD*

Figure 3.5b: *Additional (bridging) software*

For participants who chose additional (bridging) software solely to make MTD-compliant submissions there was very little change in most parts of the process. Figure 3.5b shows the differences that were found in specific processes before and after the introduction of MTD. The key changes labelled above are described below:

1. **Transferring spreadsheet data onto the additional (bridging) software was done automatically.** This additional functionality is provided to customers as an option by software developers, though it is not specified as mandatory under MTD.
2. **Additional (bridging) software automatically input and calculated some of the VAT figures for sign-off.** However, those using 'emerging solutions' calculated their VAT figures first and then manually input these figures into a spreadsheet, before employing any form of software for transferring data.
3. **Additional software was linked to HMRC systems via the API platform**. This eliminated the need for input at this stage. However, it was reported and observed that some businesses using less sophisticated 'emerging solutions' could manually and unintentionally overwrite the figures in their software packages at this stage rendering the process non-compliant. This was not possible for those using tried, tested and well-established additional (bridging) software.

Overall impact on behaviour of businesses using additional (bridging) software solely to make MTD-compliant submissions

Compared to fully or partially automated businesses, there have been fewer changes to VAT submission processes and behaviour among businesses using additional (bridging) software solely to transfer data to make MTD-compliant submissions. The enforced change introduced by MTD confused some of those businesses using software in this way, as they had low digital confidence, were comfortable with their pre-MTD approach to VAT, and were resistant to change. Consequently, they wanted to make as little change as possible to their pre-MTD approach to meet MTD requirements.

Businesses using additional (bridging) software continued keeping physical records of their invoices and receipts, which they input into spreadsheets for digital record-keeping every week, fortnight, month or quarter (depending on what they were used to) and continued to check their figures at the end of the quarter. There was thus no overall change in behaviour for these processes.

These businesses felt that digitally linking calculations and figures from their spreadsheets onto software was an unnecessary step. They could not see any benefit to their business, such as time and cost savings, and were frustrated. These feelings were exacerbated by several interrelated factors: change-resistant attitudes, the cost of software, poor accountant advice, poor understanding of the rationale behind MTD, complex sales structures, and frustration with the additional administrative or technological burden. It was also observed that this group had a poor understanding of what full compliance meant and what might be required after the soft landing period ends in April 2020. These factors are discussed immediately below.

Businesses using software solely to transfer data for MTD submission seemed to be more **change-resistant**, i.e. more anxious or reluctant to introduce and learn new software, due to low digital confidence.

> *"We don't really like change to be honest."*
> Previously used spreadsheet

> *"I come from an old school of a lot of mental arithmetic … Computer systems can also go into a lot more depth than necessary for this size of business. I have to keep a rein on it."*
> Previously used paper

This also meant they distrusted the accuracy of software and were less secure about making a submission. The introduction of software was thus viewed as reducing their control of the submission process. Consequently, these businesses either purchased software that only had data transfer functionality (either a third-party software or a custom-built software) or only used the data transfer functionality even if their software was capable of partially or fully automated processes.

This group felt that the **cost of software** was not value for money.

> *"You pay £40 and they send you another spreadsheet … it's a complete waste of time … waste of time and money."*
> Previously used spreadsheet

Furthermore, there was a sense that software providers would increase costs in the future because business owners would be a captive market. Some reported that their subscription costs had already increased, which they interpreted as the first steps in unregulated price rises.

> *"They've got it made now, so you've got no choice, so they've got you over a barrel, which is not good, because for that to have gone up in five, six months."*
> Previously used spreadsheet

There were also sole traders, micro businesses and businesses with lower volumes of transactions who felt these costs favoured larger businesses.

> *"I don't think it's fair that it's the same for us as it is for every size company."*
> Previously used spreadsheet

In general, these businesses did not mention or seem aware of free software options, with the exception of a few who used an 'emerging solution' such as

custom-built software. In some cases there was a fee per VAT submission, but other solutions were free of charge whilst they were in development or being tested with businesses. For example, one business owner anticipated that some sort of charge would be introduced in the next 12-24 months for his custom-built software once the developer completed their trials.

Some businesses also had further associated costs because they had to pay accountants to help them set up their software.

> *"Now I have to pay for the software, pay for the accountant's time, I'm going to have to do it again. I tried to do it and I haven't a clue what I'm doing."*
> Previously used spreadsheet

Some participants felt their **accountants did not have the digital capabilities to advise** on the most appropriate software for their business.

> *"I went for this one because my accountant recommended it, but she probably only did because it's the one she knows how to use."*
> Previously used spreadsheet

This led to some businesses purchasing software that was only capable of transferring data from their spreadsheet to HMRC via the API platform (either a third-party software or a custom-built software). They saw these as safer (and cheaper) options than purchasing more advanced software that would have been capable of fulling automating the VAT process. As noted above, some businesses did purchase more advanced software but only used it for bridging processes. Consequently, they felt the software was not value for money for their business. Software users with very low digital capability also had difficulties in understanding the basics of the software. This exacerbated feelings that the software was not meeting expectations or providing tangible benefits.

Businesses using additional (bridging) software solely to make MTD-compliant submissions reported that **they did not understand why MTD was being introduced** and felt that it was primarily for HMRC's benefit. The perceived lack of benefits to businesses seemed to lead to the belief that changes were being imposed for bureaucratic and administrative reasons.

> *"The only problem is I don't understand why they've done it. I don't know the reasons behind it."*
> Previously used software

> *"I don't think [HMRC] explained it very well, in terms of what Making Tax Digital means, but also the purpose of it."*
> Previously used software

Businesses with atypical or complex sales structures that were interviewed also experienced frustration. This group felt unable to find third-party software that met their business needs, and so had to procure additional (bridging) software solely to make MTD-compliant submissions or felt unable to take advantage of the full functionality of other software to meet MTD requirements. Examples of complex sales structures related to businesses that were having to adjust or make exempt a high proportion of their sales, particularly if they sold a variety of goods and services. This was exacerbated if the sales came from multiple sources (e.g. a shop, a catalogue and a website), for example, one business owner had a shop that effectively served as a 'broker' between artists and customers. These businesses felt unable to find third-party software that could correctly handle all these sales sources at once.

> *"If I'm going out and I'm going to buy props for classes, some of that's going to be VAT rated, 20%. A lot of children's stuff isn't, so that's no VAT. So, everything has to be split, you have to go physically into it, and you have to work out all the VAT, you have to type it up."*
> Previously used software

Case Study – A business using software to transfer data and mimic previous processes
A director of a small business in the education sector kept their records via two methods, software and spreadsheet. This was because they had sales from two sources, classes and a website. They kept records within software for classes and would download a spreadsheet file for the website, which automatically tagged exemptions.

The VAT figures were calculated via both methods and added together. They were then input into the form via gov.uk after checking. It was regarded as a quick and straightforward process.

Upon MTD mandation they had to procure additional software, which combined the two sources before linking to the bridging software. This added a layer of checking for the business to ensure the data had pulled through correctly. The software could also not automatically tag exemptions from the website. This meant the business had to edit exempt sales manually. These additional processes added time and resource.

> *The director also had low digital confidence, so was confused by the change and struggled to use the software effectively. These factors caused frustration. There was also an increased risk of inaccuracy via a mis-tagged exemption.*

Businesses using software solely to transfer data for submission processes felt that the **additional work** involved made preparing and submitting their VAT more difficult. Additional work included:

- **Searching for appropriate software**, for example, one business owner was frustrated by the time they were spending finding out about different software;
- **Setting up and learning how to use new software**;
- **Asking accountants or more digitally confident people** to help set up the software to accommodate their business needs, which may have incurred extra cost; and
- **Asking accountants to check the process and calculations** had been carried out correctly and accurately, which may also have incurred extra cost.

> *"It's not like I've got a finance department and I can just say, 'Deal with this'. You spend all day finding out – it's time that could be spent doing other things."*
> Previously used spreadsheet

Where businesses were having difficulties finding software that could streamline the processes involved in making a large amount of adjustments and exemptions on their receipt items, some reported feeling forced to either not use software to its fullest extent or procure additional (bridging) software solely to make MTD-compliant submissions. The setup of this software then led to them experiencing similar frustrations to those who were not digitally confident and capable. In some cases, more appropriate software was available, but the businesses either lacked information, networks or sources of appropriate advice that would have allowed them to make a more informed choice.

> *"I spoke to our accountant about this, which they couldn't actually get their head around. In the end they suggested that we just do a … spreadsheet and attach it up."*
> Previously used software

Businesses using software solely to transfer data for submission had a **poor understanding of what full compliance meant**. Some were compliant, i.e. they kept digital records and made their VAT submission via additional (bridging) software designed solely to make MTD-compliant submissions. However, many erroneously believed they were compliant, e.g. those who were manually overwriting calculated figures in an 'emerging solutions' software, or thought they would continue to be compliant after the soft landing period, i.e. they believed that keeping digital records

and using additional (bridging) software solely to make submissions was all they would have to do for the foreseeable future to be MTD-compliant. These mistaken perceptions and lack of awareness of the soft landing period came from varying sources, for example, poor accountant advice, their own misinterpretation or lack of knowledge, and difficulty understanding available information and advice.

> *"What 'compliant' is, I haven't got a clue!"*
> Previously used spreadsheet

This reaffirmed their feeling that software was an impractical and unnecessary addition (in terms of both time and money) to the already cumbersome pre-MTD approach. Finding out that they may not necessarily be fully MTD-compliant when the soft landing period finishes may exacerbate this, particularly as this group wanted to make minimal change in the first place.

Case Study – A business using additional (bridging) software solely to make MTD-compliant submissions

The owner and managing director of a small business in the wholesale and retail trade industry kept their records and made their calculations in a spreadsheet, using bridging software to submit the VAT return data to HMRC via the API platform. They wanted to find the cheapest way to become MTD-compliant but believed the bridging software was essentially another spreadsheet that mimicked the old online VAT return form on gov.uk with the nine boxes. It was seen as an unnecessary addition.

The use of bridging software led to minimal changes in their VAT process. Office staff manually entered sales invoices into two spreadsheets and calculations were made by formulae. The owner manually entered purchases into a third spreadsheet about once a week. They had always used spreadsheets for their records and were confident in their approach.

Totals were calculated for each month and each quarter. These figures were then linked to the bridging software via formulae. This eliminated the risk of manual input errors at this stage, but the risk of error was potentially greater due to possible mistakes being made when setting up the links. A final sense check of the figures and comparing the figures in the boxes with their original spreadsheet helped mitigate this risk.

The owner believed MTD was not designed with businesses' concerns in mind. They found the transition difficult and the list of MTD-compliant software overwhelming and unhelpful, and asked their accountant for advice. Their accountant recommended the particular bridging software because the accountant was familiar with it.

3.2.5 Summary

This section addressed how businesses kept records for VAT before and after the introduction of MTD. The businesses we interviewed felt the processes before MTD were highly manual with intervention required in the record-keeping, data entry and calculation stages. This meant there was scope for error in inputting figures, miscalculations, and failing to account for all records.

The businesses interviewed adopted one of three approaches to meeting MTD requirements: fully automated, partially automated, and using additional (bridging) software solely to make MTD-compliant submissions. Their choices impacted their behaviour and attitudes towards VAT.

Fully automated businesses stored all records digitally. Invoices and receipts pulled through automatically, with minimal manual input. Users could also set up rules to account for exemptions and adjustments. These records were then reconciled with their bank account to ensure everything was accounted for. Figures were calculated within the software, before being submitted to HMRC systems via the API platform. These changes led to these businesses managing their finances in real-time and undertaking regular soft checks. They saved time in collating returns, which gave them more time to spot and correct errors, and made them feel more positive towards VAT.

Partially automated businesses were similar to those fully automating their processes in that they kept records digitally within software and moved towards daily management of VAT. However, they were sceptical of change, so maintained manual input at some points, such as invoice and receipt entry, exemptions and adjustments, or bank account reconciliation. This also led some of these businesses to run their pre- and post-MTD processes in tandem to be sure they were accurate before they considered moving to full automation.

Businesses using software solely to transfer data for submission processes made minimal change to their processes. They continued to keep physical records and manually input these into a spreadsheet at regular intervals. They continued to carry out their calculations and checks at the end of the quarter. The final stage, the VAT return, was now submitted from the spreadsheet to HMRC systems directly via the API platform using their additional (bridging) software, but customers were frustrated at this extra step and the associated costs that transferring their spreadsheet figures brought about.

The impact of the changes to processes and behaviour on scope for error will be examined in the next section.

3.3 Impact of changes on scope for error

This section explores the impact of MTD for VAT for the three groups in terms of how MTD has designed out scope for error. Drawing on the evidence from the previous section, it examines both what businesses explicitly stated and what interviewers observed. It then discusses how groups can be encouraged to further automate their processes and experience the benefits of MTD we have identified for fully automated businesses.

3.3.1 Reduction of error and improvement to accuracy since MTD mandation

Overall, the businesses interviewed as part of this research saw a reduction in scope for error and perceived an increase in the overall accuracy of their record-keeping and VAT returns, potentially increasing tax revenue. The extent to which this happened and where in the overall VAT process the changes occurred depended on the changes that businesses made. This reflected both the perceptions of the businesses interviewed and the observations of the interviewers.

Fully automated businesses

There was an overall reduction in scope for error among fully automated businesses due to reduced manual input. Time savings and increased positivity also improved accuracy.

The fully automated businesses that we interviewed felt they had reduced scope for error through the following mechanisms:

- **Smart software improved accuracy**. Real-time management, in-built flagging, automatic bank reconciliation and easy-to-use interfaces and infographics allowed businesses to find and correct mistakes.

  "I can be on [the software] whenever I need to be on it … if there's something not right then it flags it up … It also gives you the chance to go and search to make sure that it is right … I can search it in seconds really."
  Previously used paper

  "Now I hardly look at the bank statement because it can't be different from what's gone through here because this is directly fed from the bank."
  Previously used paper

- **Daily management and regular soft checking** meant that errors could be **spotted quickly,** their source determined, and thus they could be **easily amended**.
- It was **easier to account for all records**, leading to a more accurate return. This was because everything was promptly **digitally stored in a single**

location via third-party software, and there were fewer paper records to mislay.

- **Input errors were reduced and miscalculation risks were eliminated** via the **automation of repetitive processes in the software**. This meant businesses no longer had to rely on manual input, or on calculations in spreadsheets or paper ledgers.

   "It's simple things like you put down 68 instead of 86, people transpose figures like that … or when you've taken a calculator you've clicked the wrong number … we don't get adding up errors when we use [software]."
   Previously used paper

- **Time savings** from reduced manual input gave businesses **more free time to use to spot and correct mistakes.**
- **Increased positivity** gave these businesses both **motivation to check** and capability to produce error-free returns through a **calmer and less stressful approach**.

It was observed that fully automated businesses were able to further reduce scope for error by hiring extra staff and contacting wider networks. This improved digital and book-keeping capabilities and gave them an extra pair of eyes to check. The time saved also helped reduce scope for error by allowing them more time to check, minimising checking fatigue and further increasing their positivity and motivation towards the process as a whole.

   "[The software] has saved a lot of work because in the early days [VAT] used to take me days. [Before the introduction of MTD] I wouldn't try and do everything at once – I'd make a mistake. [Now] I can look at it at any given time of day to see what's going on. It's all kept up to date daily."
   Previously used spreadsheet

The scope for error was not fully eliminated, with the software presenting new risks:
- **Incorrect use of software brought a new risk.** Businesses may have made an error in rules set up on the software, which could have an unknown impact on future VAT returns. However, the software had in-built flagging and checks to pick this up.
- **Those with fully automated processes were at risk of not spotting mistakes**, as they could become over-reliant on software. This was because they were not inclined to thoroughly check their figures due to trust in software.

Partially automated businesses

Scope for error was reduced for this group by balancing automation of repetitive processes with maintaining some manual control.

This group stated that:

- Like fully automated businesses, they were able to **account for everything via digital record keeping and daily management**, leading to a more accurate return, and an ability to quickly spot errors.
- **Automated processes reduced scope for input errors.** Where manual intervention was required, daily management and soft checking helped mitigate this risk, and meant errors could be easily fixed.
- **Duplicating processes, i.e. running their pre- and post-MTD approaches in tandem, helped ensure that everything was correct.** Those not duplicating processes would have a stronger relationship with their accountant and could rely on them to check that their new approach was working properly.
- **They had developed checking processes to help flag software problems.** Some had the capability to use in-built flagging on third-party software, whilst others did manual checks to see whether the figures calculated by the software matched their expectations.
- **Deliberate and targeted hard checking processes had been developed to complement daily management and soft checking.** For example, some manually reconciled and checked bank statements to ensure they matched up with what was on an itemised VAT report. As businesses' confidence increased over time, these sorts of checks were expected to become less frequent.

It was observed that this group were diligent and thorough and did not want to become complacent. This, combined with the additional time saved from automating processes, meant they did not rely only on the software. Some of these businesses used some of the time saved to undertake extra checking, whilst others invested this time in their business.

> *"It's definitely changed for the better, saved me a lot of time and it's time I can put into helping the company."*
> Previously used paper

Partially automated businesses reported some experience of input errors or incorrectly setting up rules in their software, indicating that some risk of error still remained. However, it was observed they had reasonably rigorous checking processes in place to mitigate this and would manually intervene if unsure.

> *"It took more time trying to sort the problems out than just doing it manually. We tried it that way for several months and there were too many anomalies. It wasn't a one-off. It was very clunky. It took longer to fix, and then we weren't 100% confident. You had to check it anyway."*
> Previously used software

These businesses did not have the networks to digitally upskill their business. This meant they may not have procured the most appropriate software package, and retained unnecessary manual processes, such as manual bank reconciliation.

> *"I think anybody starting off with it does need guidance, you can't jump into this without some sort of help."*
> Previously used paper

Businesses using additional (bridging) software solely to transfer data for MTD submission processes

Businesses using software solely to transfer data for submission processes seemed to have seen no overall change in scope for error.

- **These businesses still kept physical records of receipts and invoices, only manually entering them into a spreadsheet for digital record-keeping every week, fortnight, month or quarter**, based on what they were used to. The risk of mislaying physical records and making an input error thus remained the same as their pre-MTD approach.
- **Calculations and checks tended to be carried out before entering figures into a spreadsheet or software.** The risk of carrying through calculation errors into their final figures thus remained the same.

These businesses consciously made minimal change to their processes. Depending on the type of software they used to transfer data, there were different impacts on scope for error, and potentially new opportunities for error.

- **Inputting the data incorrectly into the online VAT return form on gov.uk was no longer a risk** for those using a third-party software which linked their spreadsheets to HMRC systems via the API platform. This was because use of such software removed all manual input from this part of the process.
- However, for those using 'emerging solutions' to transfer data, e.g. add-ons and macro-enabled spreadsheets, there was an **additional risk of incorrectly transferring the spreadsheet data from their device or network drive onto the software.** This was because in these cases users were able to manually edit or overwrite figures and formulae in their custom-built software solutions, with the potential for input error, calculation error, or linking data from the wrong cells, e.g. pulling VAT data from the wrong quarter.

> *"If I have a mistake in my spreadsheet, it's still got the same mistake [in the software] … It's not reducing error. It might increase error if I link the wrong box."*
> Previously used spreadsheet

The negative perceptions of MTD and the low confidence this group had in technology and book-keeping had a mixed impact on scope for error:

- **Some businesses were demotivated to check**. This was due to the confusion they felt stemming from their lack of understanding of the software, as well as the frustration caused by the additional time they spent on familiarising themselves with the new software and MTD.
- For other businesses, **the fear of making mistakes because of the enforced change encouraged them to take extra time and care**. It also meant they were more inclined to check or call their accountant for assistance if possible.
- They also **did not trust software, so checked data thoroughly**. Some software had functionality to mitigate miscalculation.

"I check, double check, triple check!"
Previously used spreadsheet

3.3.2 Strengthening the impact of MTD

The impact of MTD on scope for error and potential additional tax revenue is strengthened when businesses become fully automated. For those using software solely for transferring data, better guidance from third-parties, such as accountants, on which software to choose could reduce scope for error and frustration with MTD. This is because choosing appropriate software could allow them to benefit in the same way as those fully or partially automating processes, and could enable them to remain fully compliant after the soft landing period. Providing examples of some of the practical benefits experienced by fully automated businesses may help to encourage others.

"I'm a lot more aware of when we have a bad week or a good week because it's right in front of you – you can see the figures."
Previously used paper

For those partially automating processes, greater awareness of software packages and functionality could reduce scope for error by removing the risk of input or checking errors. For instance, some did not choose a provider where their bank account automatically reconciled, as they did not know the option was available to them.

In the case of those using fully automated software, more advanced software where flagging and error detection are built-in could help mitigate the risk of complacency and increase the chance of an accurate return.

3.3.3 Transitioning between groups

As businesses have only recently become MTD mandated, there could be transition between the three groups (fully automated, partially automated and businesses using

software solely to transfer data for submission). Those using software solely to transfer data for submission will not necessarily be compliant beyond April 2020 when the soft landing period has ended if they have not fully digitally linked their processes. It is important to encourage this, as further automation and digital record keeping should further reduce scope for error and could potentially lead to additional tax revenue, as discussed above.

Businesses using software solely to transfer data for submission processes had a poor understanding of MTD, with a tendency to believe they had met all MTD requirements for the foreseeable future. They were frustrated by the change, seeing no tangible benefit to them and unnecessary extra steps being forced upon them. A clear message focusing on the benefits of simplifying processes and saving time may encourage compliance beyond the soft landing period. This message can be evidenced through the positive impact MTD had on fully automated businesses. It could focus on three main themes that emerged from the interviews:

- **Ease of automation:** It needs to be made clear that automating processes can be straightforward. There should be signposting towards helping businesses find the most appropriate software, stating that they can use free software trials.

  "At first, I was a bit apprehensive thinking, 'Oh God, it's going to be so difficult,' but it turns out it's not."
  Previously used software

- **Ease of managing VAT:** Businesses need to be made aware that it may be easier to manage VAT when all records are stored in one place, and calculations are automated within software. The businesses we interviewed reported that this led to greater confidence and a greater sense of control over the business, which could help to motivate others to automate their processes.

  "What's really great is I have complete control … It's empowered me and given me a greater understanding of how my business works."
  Previously used paper

- **Time saved:** A message that businesses can save time and money on administration in the future will help encourage greater automation. It should focus on giving small business owners the time they need to help build their business and get on with what they are passionate about, and on how these savings could later increase a company's capacity for business development.

  "I feel confident in the software that we're using … it's been a plus, as a company … because of the time we're saving."
  Previously used software

Using **case studies** of how other small businesses managed to benefit from greater automation may help embed the above points.

This message could be communicated via third-party agents because less automated businesses were unlikely to engage with materials directly from HMRC. This could potentially include working with third-party software providers because this group tended to have weak relationships with their accountants, if they used one at all. This was particularly the case with more traditional software which had the functionality for partial or full automation but still had customers using it solely to transfer data to make MTD-compliant submissions.

For those partially automating processes, the business may fully automate when they are confident enough to do so once they are sure the software is getting their return right. However, it is important to increase awareness of software functionality, such as automatic bank reconciliation and setting up exemption rules, as these businesses had smaller networks from which to access relevant expertise and advice.

It is important to ensure that software providers can cater for businesses' needs and communicate this effectively. It was challenging for businesses to make the investment required to move to full automation if they felt unable to find appropriate software or did not believe the software could help them manage VAT in an efficient manner.

3.3.4 Summary

This section explored the extent to which MTD for VAT reduced scope for error and improved accuracy.

Overall, scope for error was reduced for those fully or partially automating their processes. As discussed previously, this could lead to additional tax revenue. Businesses in these groups stated that this came through a reduction in input errors, finding it easier to store records, regular soft checking and automated calculations. Both fully and partially automated businesses were also able to rely on a capable accountant for help.

Fully automated businesses felt that automatic reconciliation with bank account data reduced error by ensuring everything matched up. It was observed that a willingness and ability to upskill digital and book-keeping capabilities, time savings, and increased positivity also reduced scope for error. However, the lack of hard-checking and risk of complacency meant that some risk of error remained, as did a new risk of incorrect setup on their chosen software.

Partially automated businesses felt that keeping a sense of manual control further decreased scope for error. Some did this by running their pre- and post-MTD processes in

tandem to be certain of accuracy and to iron out any software issues. By manually reconciling their bank account data they were able to both hard check data for errors and inconsistencies, whilst also soft checking daily to ensure all records were being input accurately. However, scope for error remained, with the manual interventions carrying input risks. They were also not able to upskill to the same extent as those fully automating.

Businesses using additional (bridging) software solely to make MTD-compliant submissions saw little change to their overall accuracy, but the focus of scope for error had moved to a different point in the process. Pre-MTD, businesses felt inputting information into the form presented a risk of error. However, those using additional (bridging) software now saw this risk as incorrectly transferring data from their spreadsheet onto the software. Their negativity towards MTD had a mixed impact on scope for error. For some, a sense of anxiety and pressure increased the chance of a mistake, and the resulting fatigue and frustration demotivated them to check for these mistakes. For others, scepticism and low confidence made them take more time and care in inputting their data, and the fear of an inaccurate return encouraged checking.

To encourage further change among those using additional (bridging) software, it needs to be communicated that switching to third-party software may be more straightforward than expected (as reported by the other businesses we interviewed), and that they may find managing VAT easier and less time consuming, which will allow them to focus on running their business. For partially automated businesses, more guidance on the usage of software, as well as continuous improvement of functionality may lead to them becoming confident enough to fully automate their processes sooner.

4. Conclusions and future directions

4.1 Conclusions

This research used qualitative evidence from sixty businesses to examine detailed changes to record keeping behaviour driven by MTD for VAT requirements. It examined how these changes reduced scope for error for businesses, and by extension whether MTD has the potential to deliver additional tax revenue.

We will first summarise the differences in processes before and after the introduction of MTD for VAT, and how this impacted on scope for error. We will then consider implications for how this may deliver additional tax revenue.

We found evidence that, overall, **MTD helped design out scope for error among those automating processes, so MTD has the potential for delivering additional tax revenue among this group**. For fully or partially automated businesses, book-keeping systems are largely automated and records kept digitally. This reduced scope for error.
- Book-keeping and calculations were automated, and errors were flagged by software. Records were kept digitally within third-party software. This reduced manual input, and facilitated daily, real-time management via a reduction in time spent on VAT.
- There was less opportunity for input error via automation, and it was easier to account for everything as it was stored in a single place.
- Time savings and daily management made it easier to check and correct mistakes.

Those using additional (bridging) software solely to make MTD-compliant submissions continued to do manual calculations and store records physically before entering data at regular intervals (weekly, fortnightly, monthly or quarterly) into spreadsheets for digital storage. The overall scope for error remained similar, but its focus changed. Having no input into the online VAT form reduced scope for error for those using a third-party software, but the extra step of transferring records into software potentially increased scope for error for those using 'emerging solutions' for transferring data.

The research also attempted to specify where businesses could pinpoint instances where scope for error was reduced. **Fully and partially automated businesses viewed MTD returns as more accurate because of the following:**
- Fully or partially automated businesses said reduction in error came from fewer input errors, and greater ease in accounting for all records. Time savings and real-time management made it easier to source and correct mistakes.
- It was observed that fully automated businesses may become complacent and risk error. They mitigated this through sense-checking VAT reports before submission. The software had in-built flagging if figures did not match up with bank accounts or VAT period dates.

- Fully automated businesses upskilled their business in terms of book-keeping and digital capabilities through good access to networks and resources.
- Those partially automating still risked input error to some extent. However, to ensure everything was right, some ran their pre- and post-MTD approaches in tandem.
- Overall, the perceived reduction in error, and either trust in the software, or willingness to run dual processes meant fully and partially automated businesses believed their returns were more accurate.
- Businesses using additional (bridging) software solely to make MTD-compliant submissions felt error was reduced through not having to input figures into the online VAT form. However, they felt that the extra step of transferring the data onto the software may have increased the risk of error if this was not done correctly.
- MTD frustrated those using additional (bridging) software, which demotivated them to thoroughly check, but low digital confidence potentially reduced errors through their willingness to take time and care to ensure accuracy.

In order to assess the extent to which scope for error has been designed out, the research aimed to explore in detail how businesses changed their record-keeping behaviour. We found that, at a high level, businesses **met their record-keeping obligations under MTD for VAT** in three main ways:
- **Fully automated businesses** automated their record-keeping to the fullest extent, with some eliminating all forms of manual input of invoices and receipts.
- **Partially automated businesses** automated some of their processes, but kept manual control over several elements.
- **Businesses using additional (bridging) software solely to make MTD-compliant submissions** generally kept the same level of manual intervention as their pre-MTD approach. Those we interviewed had not fully digitally linked their systems so will not remain compliant after the soft landing period ends.

When exploring these changes in detail, key differences in how businesses approach MTD compared to their pre-MTD processes include digital storage, daily (rather than monthly or quarterly) management, and less input or manual calculation.
- Previously, small businesses had to input records manually. This required intervention at both the record-keeping and calculation stages, and led to businesses spending several days collating information at the end of each month and/or quarter.
- For those who were fully digitally linked, records were stored digitally within their chosen software package. The data were fully linked, which reduced the amount of input required. They managed VAT in real-time on a daily basis, with software providing live data.
- Those using software to transfer data for submission consciously made minimal change. They used their pre-MTD approach, but now transferred data from

spreadsheets into software, which was used to submit VAT return data to HMRC via the API platform.

However, **there is further scope to design out error, and by extension deliver additional tax revenue to a greater extent.** Businesses using additional (bridging) software solely to make MTD-compliant submissions need to be made aware of the potential ease of MTD in order to encourage further automation of processes.

- There was a misperception that using additional (bridging) software alone would be sufficient for full MTD compliance after the soft landing period. To encourage them to automate processes and fully digitally link records, communicating the benefits of change could ease scepticism and may lead to them procuring compliant third-party software.

It can be concluded that the changes to behaviour and processes reduced the overall scope for error for businesses willing to automate their processes. There was less manual input involved, leading to fewer input errors. Automated calculations reduced miscalculations. Storing everything digitally in a single place decreased the chance of missing records and failing to account for everything. Businesses were also able to save time and manage VAT daily, which made it easier to check for and correct errors should they occur. This meant that MTD for VAT could provide additional tax revenue if the logical assumption is true. However, additional tax revenue can theoretically be increased further by convincing those using software solely to transfer data for submission to fully automate their processes.

4.2   New considerations from research

MTD for VAT has been developed recently, and the research found further themes and questions to explore and assess the extent to which error has been designed out and additional tax revenue could be generated.

How can it be ascertained that reduced scope for error leads to additional tax revenue?
- It was found in the study that scope for error was reduced by businesses automating processes. Theoretically this should lead to additional tax revenue. However, the research was not designed to measure this explicitly.

How can those using software solely to transfer data for submission to HMRC be convinced to use more automated processes?
- It was found in the study that those using software solely to transfer data via the API platform were unlikely to know what full compliance meant and were unwilling to change their processes. Therefore, there is a challenge regarding encouraging full compliance among this group.
- It will be important to monitor those making the switch from additional (bridging) software and assessing what motivated and enabled them to do so. Businesses can

then be profiled and communications can be tailored for businesses using software in this way. It is also important to learn from businesses that are already compliant.

Will partially automated businesses become fully automated, or will their behaviours remain the same?

- In our study, some businesses that had partially automated their processes had only been using their MTD-compliant software for one or two submissions. They were unconfident about the changes, so retained some manual input. They felt they had made minor improvements to the efficiency of their tax processes but had reduced scope for error. Therefore, it was unclear as to whether they would stay with their current approach or further automate their processes once their confidence increased.

- Some businesses may further automate their processes and go onto save more time and reduce scope for error. However, some may have now embedded their processes and become permanently partially automated. It is important to assess whether this presents a risk to tax revenue through businesses failing to update systems. A further risk to productivity may also be considered if businesses continue to run both processes in tandem.

How can businesses avoid the risk of complacency brought about by further automation?

- The study found that some businesses were extremely satisfied with the capability of the MTD for VAT software, trusted it completely and had fully automated their processes. There was a risk that this was premature, which meant they would not conduct checks to see whether the software was functioning or had been set up correctly. Those with less functional or lower quality software might not have the in-built flags to help mitigate this. This risk could be reduced by having accountants set up the software or by conducting hard checks in tandem, though this resulted in (short-term) increases in cost and time.

- As time progresses there is a risk that businesses will not be minded to check their VAT figures, and let the process run in the background. It will be important to monitor this to ensure scope for error does not re-enter VAT processes and negatively impact tax revenue.

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