PRICEWATERHOUSECOOPERS

Study on the feasibility of alternative methods for improving and simplifying the collection of VAT through the means of modern technologies and/or financial intermediaries

Final Report – 20 September 2010

Contents

Preface

This document constitutes the Final Report in the framework of the Study on the feasibility of alternative methods for improving and simplifying the collection of VAT through the means of modern technologies and/or financial intermediaries.

In Phase 1 of this Study, PricewaterhouseCoopers made an inventory of potential alternative methods for improving and simplifying the collection of VAT in the Inception Report. A step-by-step description of fourteen alternatives was delivered. Furthermore, during Phase I, a high-level assessment of the alternatives was made in order to identify which of them needed further investigation as part of our Study.

Further to Phase 1, the Commission Steering Group selected the following four alternatives to be analysed in greater detail:

- alternatives 3 and 4 combined: Automated or manual split payment – Blocked VAT bank account at the level of the tax authority's bank (herein referred to as the split payment model);
- alternative 6: Central VAT monitoring database (herein referred to as the central VAT monitoring database model);
- alternative 7: Central VAT monitoring through direct access by the tax authority to the VAT data warehouse of the taxable person (herein referred to as the data warehouse model);
- alternative 14: Certified taxable person (herein referred to as the certified taxable person model).

In Phase 2 of the Study, for each of the selected models, we covered the following items:

- details of the possible scope of each of the models selected;
- a detailed step-by-step flowchart of how the collection process of the model would work (process);
- detailed roles and responsibilities of each of the stakeholders;
- sustainability of the model under different scenarios;
- reporting obligations required to make the model work;
- cash-flow impact for the different stakeholders (supplier, customer, intermediary, government);
- mandatory or optional character;
- costs and benefits for the different stakeholders (including technical requirements);
- best practices implemented or considered in other countries and other sectors.

In the Phase 3 of the Study we provided an objective overview of the costs, benefits and feasibility for each of the four models selected by the Commission Steering Group.

A Study of this size requires an expertise in multiple disciplines. In order to deliver this Study, we worked with two groups of experts, a Multidisciplinary Core Team and a Global Multidisciplinary Expert Panel.

The Multidisciplinary Core team consisted of Ine Lejeune, who acted as the Project Leader and of Inge Cools, Luc Hendrikx and Bert Mesdom, who acted as experts in respectively impact assessments, clearing and payment models and VAT. Bert Mesdom also acted as the project manager for this Study.

The Global Multidisciplinary Expert Panel provided input in each Phase of the Study. Throughout the Study, the Global Multidisciplinary Expert Panel assured the robustness of the methodology, data collection, assumptions and conclusions. The Experts involved in this Study are Peter De Bley, Stephen Dale, Rudy Hoskens, Mark Howard, Peter Merrill, Marc van der Graaf and Ingvar Van Droogenbroeck.

In addition to these two groups of experts, we also relied on the global network of Indirect Tax and IT specialists of PricewaterhouseCoopers.

Equally so a Commission Steering Group was appointed. This Steering Group provided input and challenged findings where needed on a periodical basis.

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20 September 2010

[1] PricewaterhouseCoopers refers to the network of members firms of PricewaterhouseCoopers International Limited each of which is a separate and independent legal entity.

1 Executive Summary

1. This Study explores the feasibility of alternative methods for improving and simplifying the collection of VAT by means of modern technologies and/or financial intermediaries. The current collection model is based on the following processes:

- the purchaser pays VAT to the supplier (taxable person), mostly together with payment for the goods or services;
- the supplier collects the VAT on behalf of the tax authority;
- the supplier files a VAT return and makes a balance between VAT collected and VAT deductible. Thereafter, the supplier should pay the balance to the tax authority on a regular basis.

2. Inherent in this process is the fact that the tax authorities mostly verify the correct VAT treatment of transactions ex post, i.e. once the taxable person has filed a VAT return.

3. The current collection model brings with it a VAT Gap due to e.g. VAT fraud, insolvencies, mistakes by the taxable persons in the VAT return and VAT avoidance schemes. Desk research shows that the VAT Gap for 2009 can be cautiously estimated at 6,9% of GDP and 12% of total VAT liability in the EU-27. This means that, in the EU-27, a total of EUR 118,8 billion has according to those estimates not been collected by the tax authorities in 2009.

4. This Study examines models to improve and simplify the collection of VAT and/or the audit of transactions. The models in this Study only look at modifying the operational VAT collection process. They do not alter any of the fundamental principles of the VAT system (e.g. time of supply, reverse charge).

5. The Study contains three phases:

- phase 1: designing of the alternatives;
- phase 2: detailed description of the models selected by the Commission Steering Group;
- phase 3: qualitative and quantitative assessment.

6. In order to deliver this Study, we worked with two groups of experts, a Multidisciplinary Core Team and a Global Multidisciplinary Expert Panel.

7. The Multidisciplinary Core team consisted of Ine Lejeune, who acted as the Project Leader and of Inge Cools, Luc Hendrikx and Bert Mesdom, who acted as experts in respectively impact assessments, clearing and payment models and VAT. Bert Mesdom also acted as the project manager for this Study.

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Experts involved in this Study are Peter De Bley, Stephen Dale, Rudy Hoskens, Mark Howard, Peter Merrill, Marc van der Graaf and Ingvar Van Droogenbroeck.

9. In addition to these two groups of experts, we also relied on the global network of Indirect Tax and IT specialists of PricewaterhouseCoopers.

10. Equally so a Commission Steering Group was appointed. This Steering Group provided input and challenged findings where needed on a periodical basis.

11. In Phase 1 of this Study, 14 alternatives were considered:

- alternative 1 – Automated split payment – Blocked VAT bank account at the level of the automated clearing house;
- alternative 2 – Automated split payment – Blocked VAT bank account at the level of the taxable person's bank;
- alternative 3 – Automated split payment – Blocked VAT bank account at level of the tax authority's bank;
- alternative 4 – Manual split payment;
- alternative 5 – Automated split payment in the case of credit card payments;
- alternative 6 – Central VAT monitoring database;
- alternative 7 – Central VAT monitoring through direct access by the tax authority to the taxable person's system;
- alternative 8 – Transaction and VAT payment monitoring at the level of the automated clearing house (enriched data);
- alternative 9 – Transaction and VAT payment monitoring at the level of the bank (enriched data);
- alternative 10 – Credit card VAT payment monitoring;
- alternative 11 – Standard Audit File for Tax;
- alternative 12 – Certified VAT service provider;
- alternative 13 – Certified VAT software system;
- alternative 14 – Certified taxable person.

12. For each alternative we developed a process description which have been reviewed by the Commission Steering Group and the Multidisciplinary Expert Panel. These alternatives were evaluated against the OECD criteria for tax systems. Based on this evaluation, four alternatives were selected for further analysis. These four alternatives (subsequently described as "*models"*) focus on:

- a different way of collecting VAT through split payments made by purchasers of the goods and services (split payment model);
- a better and quicker monitoring of VAT positions through a central VAT monitoring database of e-invoice data (central VAT monitoring database model);
- a better and quicker monitoring of VAT positions through standard audit

files for tax that are available in data warehouses (data warehouse model);
- a qualitative method for risk profiling using certification of taxable persons (certified taxable person model).

13. Each model focuses on different aspects of the VAT collection process and applies to different segments of taxable transactions. Furthermore, the suggested or feasible scope of the models is different (e.g. B2B only or both B2B and B2C).

14. Hence, it is not possible to rank the four models absolutely in terms of costs and benefits as their scopes differ and the benefits they might generate are different, and even complementary. The aim of studying the costs and benefits of each of the models is to learn about the opportunities they provide in reducing the VAT Gap and to explore the conditions under which they can be made to work most efficiently.

15. The cost/benefit analysis examines the direct, incremental costs and benefits of introducing each of the four models compared to the current system. Therefore, the Net Present Value (NPV) of both the investment cost and the recurring, operational cost for all the parties involved (the taxable person, the tax authority, and the tax authority's bank) is compared to the NPV of the benefits in terms of potential VAT Gap reduction[2]. If the balance is positive, it means that, in the long run, the model will pay for itself. Of course, initial pre-financing will be required, as benefits will only accrue once implementation has been achieved.

16. In order to study the direct effects of different implementation strategies, the NPVs of each model have been calculated under three alternative implementation scenarios:

- the 6+21 scenario: the implementation is piloted in six Member States and, after an evaluation phase, is implemented simultaneously in the other 21 Member States;
- the big bang scenario: implementation takes place simultaneously in all Member States;
- the 6+7+7+7 scenario: the model is implemented gradually, with more Member States implementing it each year.

17. The time frame considered in the assessment is 2011-2038. Each scenario takes an equal preparatory phase of 4 years (2011-2015) into account in which the legislative process takes place at the European level. From 2016 the models are implemented in the Member States according to the different scenarios. As in most scenarios the models will be fully operational from 2020 or 2024, this allows for a

[2] The benefits only include direct earn-back effects by improved VAT recovery (caused by the reduction of different types of VAT fraud). Indirect earn-back effects, such as reduction of administrative burden, have not been taken into account in the calculation as they do not represent a direct cash flow that can be used to finance the investments.

proper review of the way costs develop over time under the various scenarios and models. We assume that the benefit in terms of a reduction of the VAT Gap can only be expected when all Member States have fully implemented the model. We do this to e.g. account for the lead time of the investment and the uncertainty on the movements of fraudsters and fraud patterns in the EU-27.

18. In order to compare the incremental costs and benefits of the new models under the three scenarios, data on the current situation are needed and the following questions need to be resolved:

- how many taxable persons are there in the EU-27?
- how many invoices and payments do they generate (B2B and B2C)?
- how many B2B and B2C transactions are there?
- how many VAT returns are filed in the EU-27?

19. The desk research carried out during this Study shows that this data is not readily available and that different sources often state widely varying figures.

20. In order to be able to calculate the NPV for the four models, numerous assumptions needed to be made and numbers have been extrapolated or recalculated. One of the important recommendations of this Study relates to the reliability of fundamental data on the current VAT system. In order to conduct a complete feasibility study for a given model, much more complete and accurate data needs to be available and the cause-and-effect relationships between certain figures need to be studied in greater detail. Issues that need to be resolved include:

- how many businesses account for what share of B2B and B2C transactions?
- are payments for B2B transactions always made by electronic funds transfer (EFT) or do other payment methods also have an important share in B2B trade?
- which proportions of the VAT Gap can be explained by which causes? What is the scope of a given fraud mechanism? What kinds of businesses (B2B or B2C) and what kinds of payments (e.g. electronic funds transfer, credit card, and cash) are involved? What involvement do businesses that are under the VAT registration threshold have in the various fraud schemes?
- what is the magnitude of the VAT Gap caused by each type of fraud? And how many taxable persons are involved?

21. A far more solid understanding of these issues will lead to a far more balanced evaluation of the way models can help address the existing problems. It will also provide a better appreciation of the investment that would be justified in order to combat fraud and close the VAT Gap.

22. Taking into account these data collection issues and assumptions, the conclusions and recommendations should be read with extreme caution.

23. Based on the limited data available at the present time, we can state that an overall reduction in the VAT Gap by 10% two years after implementation of a model would generate an NPV of EUR 150 billion over the period 2016-2038. This benefit justifies an investment in new technology and an alteration in how VAT is collected.

24. The more fundamental questions are: which model will be most effective in combating specific parts of the VAT Gap? And how it can be implemented cost-efficiently? These questions have generated the following conclusions for each of the four models.

Conclusions and Recommendations

25. The conclusions for the four models and the rough estimations of costs and benefits are only useful in so far as:

- the model(s) chosen is (are) obligatory for all Member States and the taxable persons. If this is not the case, it can be expected that fraudsters are likely to operate in those Member States that do not impose the model thus shifting the VAT Gap from one Member State to another. This is why in the three scenarios we only take the benefits into account as soon as the model is implemented in all 27 Member States;
- the implementation of the model (obligation, technical requirements, systems,….) is exactly the same, i.e.100% harmonised for all Member States.

The split payment model

26. The split payment model is a model in which the purchaser pays the VAT to a blocked VAT bank account which can only be used by the supplier for paying VAT to his suppliers' blocked VAT bank account. The advantage of this model is that, in an early stage of the VAT collection process, the VAT collected is physically transferred to a blocked VAT bank account with the tax authorities' bank. This model allows the tax authorities to monitor and block funds on the VAT bank accounts and prevent taxable persons from disappearing with VAT funds paid to them.

27. A high-level cash-flow impact assessment ascertained that clearly, for certain taxable persons, the split payment model will not have a significant impact whereas, for others, it may have a significant impact. However, a negative effect may be compensated partially if the tax authority would refund VAT much quicker than under the current VAT model if some compliance costs would be reduced by

providing a pre-filled VAT return for taxable persons with a blocked VAT bank account.

28. The benefits of the model are great, as the tax authority can be sure that it will receive all the VAT collected on B2B transactions. This benefit will, however, only be realised to its fullest extent, if the model is made mandatory, the chargeable event is for all supplies always at the time of payment and a large number of B2B transactions are settled using electronic funds transfer (EFT). It is currently unknown how many B2B payments are settled using EFT versus in cash or with credit or debit cards. If additional research shows that a large number of transactions are paid using credit or debit cards, or even cash, the benefits will dwindle and additional evasion could arise by businesses that start using alternative payment channels instead of EFT.

29. The model requires a high initial investment and a longer implementation phase as banks will have to adapt their payment facilities, such as online banking programs. According to the implementation time frame the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2020. The impact of this model is comparable to the implementation of the SEPA regulation throughout Europe.

30. In this model there is a limited direct investment required by the taxable person. There is however a considerable operational costs as the taxable person needs to manage this additional blocked VAT bank account. Apart from investments by taxable persons' banks plus the additional clearing costs that will arise for each payment, the model also requires a large investment programme by the tax authorities' banks, which will be in charge of managing the blocked VAT accounts, and by the tax authorities themselves, who will have to monitor each taxable person's VAT current account and (possibly) generate pre-filled VAT returns.

31. The costs of these kinds of applications will vary from Member State to Member State as the requirements will depend on the maturity of existing technology, the required level of integration with other legacy systems and the level of decentralisation of the tax authority in question.

32. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the split payment model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs is estimated to be EUR 966 billion.

33. The cost/benefit analysis shows that this model has a high minimal cost, which is mainly caused by the requisite level of investment, and a relatively low maximal cost, as there are no additional investments to be made as soon as the system is up

and running (unlike the other models which require investments across the time frame per additional taxable person).

34. An issue which needs to be addressed when moving forward with the split payment model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the banks and taxable persons when implementing the model. In this view the support would translate the potential benefit to the tax authority into incentives for the taxable person and the banks in order to smoothen the implementation process.

The central VAT monitoring database model

35. This model can only work if e-invoicing is made obligatory for B2B transactions[3] and if the data contained in e-invoices is actively mined by the tax authorities. The main cost component of this model is the investment by taxable persons to change from paper invoicing to e-invoicing. Additional operational costs will include the cost of the data transfers to the central VAT monitoring database and the cost of maintaining and mining large volumes of data by the tax authorities. According to the implementation time frame, the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2018.

36. One benefit of this model is that the tax authorities gain access to information on sales transactions at a very early stage, i.e. at the time the invoice is issued. However, the tax authority will not be able to block VAT at the time of payment, as it could in the split payment model. Hence, the recovery rate in cases of detected VAT fraud is not always guaranteed.

37. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the central VAT monitoring database model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs is estimated to be EUR 788 billion.

38. An issue which needs to be addressed when moving forward with the central VAT monitoring database model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the taxable persons when implementing the model. In this view the support would translate the potential benefit into incentives (e.g. subsidies to invest in technology) in order to smoothen the implementation process.

[3] It may be envisaged to also include (certain) B2C transactions. However, the impact of such an enlargement of scope has not been assessed in this Study.

The data warehouse model

39. The data warehouse model requires two initial investments by the taxable person: the accounting system needs to be able to generate a standard audit file for tax and the data in that file needs to be stored in a data warehouse that can be accessed by the tax authority. This model has already (partially) been implemented in some Member States. The use, format and data elements have been defined in OECD Guidance.[4] Experience in these Member States shows that the first type of investment is limited, as most suppliers of accounting software adapt their applications to comply with the requirement of generating a standard audit file for tax purposes. Implementing data warehouses by each taxable person would, however, require a large-scale investment. According to the implementation time frame, the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2018.

40. The benefits of this model are greater than those with the split payment model and the central VAT monitoring database model as it also allows monitoring of B2B and B2C transactions. All activities (sales, invoices, payments) within an entire sector and supply chain can be audited.

41. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the data warehouse model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs amounts to EUR 1.389 billion.

42. Nonetheless, the level of investment is considerable. There are different ways to reduce those costs. The first solution could be that the data needed would not have to be made accessible in a data warehouse, but the authorities could, at any time or on a periodic basis (e.g. once a year), request to be provided with the standard audit file. This could mean a cost reduction of respectively 24% and 44% .

43. A second solution that could be combined with the first one, would be to require a data warehouse only from certain types of taxable persons (e.g. those that require closer monitoring and auditing due to their fraud-risk profile).

44. An issue which needs to be addressed when moving forward with the data warehouse model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the taxable persons when implementing the model. In this view the support would translate the potential benefit into

[4] OECD, Guidance for the Standard Audit File – Tax, April 2010, http://www.oecd.org/dataoecd/42/35/45045602.pdf

incentives (e.g. subsidies to invest in technology) in order to smoothen the implementation process.

The certified taxable person model

45. Under this model, the taxable person needs to comply with the requirements for certification and invest in an internal control system. The model requires limited investment for taxable persons whose VAT accounting systems have been approved and authorised by the tax authorities and/or that already comply with other legislation that poses similar requirements, such as Sarbanes-Oxley. The benefit of the model is additional assurance that taxable persons use compliant systems and that the risk level diminishes. This could offer opportunities to target audit efforts on segments of taxable persons that pose a higher risk. The benefit in terms of reduction of the VAT Gap is lower than in the other models. According to the implementation time frame the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2018.

46. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the certified taxable person model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs amounts to EUR 813 billion.

47. An issue which needs to be addressed when moving forward with the certified taxable person model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the taxable persons when implementing the model. In this view the support would translate the potential benefit into incentives (e.g. subsidies to invest in technology) in order to smoothen the implementation process.

General Conclusion

48. The way the actual costs and benefits will turn out, will strongly depend on the way a model is implemented by the Member States (as apparent when comparing the results per implementation scenario for each model). The implementation in all Member States with full harmonisation and cooperation between Member States are key to achieve the effectiveness of each model as the VAT Gap is not only dependent on local measures but also on how the fraud is tackled across the Member States (as apparent for missing-trade intra-Community fraud).

49. One model of itself will not effectively close the VAT Gap. This is because not all the models apply to all taxable persons and to both B2B and B2C transactions and in no model is it possible to monitor all transactions and take action in real-time. Some of the models have shown themselves to be potentially effective for parts of the VAT Gap. A final conclusion in this area will require further detailed analysis of the VAT Gap and greater study of the cause-and-effect relationship between certain types of transactions and businesses. From this Study, we can conclude that a combination of models that tackles both tracing transactions on a real-time or nearly real-time basis (data warehouse model) and offers the ability to block funds for some transactions (split payment model) offers the greatest prospects of success. Additional assurance can be gained from further monitoring transactions and enhanced control requirements (e.g. by means of certification requirements for certain types of businesses).

Recommendations

Overall recommendation

50. Based on our Study it appears that a combination of the split payment model with a limited version of the data warehouse model as described above (hereafter referred to as the *"limited*" data warehouse model), i.e. a model where data is produced in a standard format but without direct access in a data warehouse, offers the best combination in reducing the VAT Gap while keeping the estimated costs as low as possible.

51. The split payment model reduces the VAT Gap by intervening in the payment and collection cycle, which is the most effective way to ensure that VAT is paid. The disadvantage of the split payment model, however, is its *"limited"* scope (i.e. electronic funds transfer for B2B transactions). Furthermore, the split payment model may have a couple of other shortcomings relating to the cash-flow impact and the difference between the time of payment and the time VAT becomes due. The potential cash-flow disadvantage and mismatch between the VAT payment between parties and the moment VAT becomes due could be overcome by making VAT due at the moment the payment is received. However, as this is a fundamental principle of the VAT system this has not been further investigated in the Study. The disadvantage of the limited scope however, is overcome in the data warehouse model. By having access to a full set of data, the tax authority is able to monitor a full supply chain (both B2B and B2C transactions and both cash, EFT and credit or debit card payments) and detect patterns that could create a VAT Gap (e.g. threshold fraud by customers). The main disadvantage of the data warehouse model is the cost of keeping a data warehouse accessible at all times. In order to limit these costs, it may be envisaged to eliminate the data warehouse requirement and require that the standard audit file is available on simple request by the tax authorities. This *"limited"* data warehouse model could be implemented in all Member States as from 2018 thus already producing its benefits from that time.

It could then be complemented with the split payment model that could be operational under the big bang scenario as from 2020. This will not allow the tax authorities to perform audits on a real time basis. However, this disadvantage may be partially off-set by robust audit methodologies and risk profiling by the tax authority allowing them to identify high-risk taxpayers who would be required to provide the data within short time frames (close to real time audit).

52. Finally it should be noted that, in this combination, a couple of benefits for the taxable persons may be created. As mentioned in the Study, the split payment model may allow for a pre-filled VAT return, which will be beneficial for some taxable persons. Additionally, it may be envisaged to eliminate certain listing requirements (e.g. yearly client listing, yearly consolidated VAT return) if the tax authorities are provided with a standard audit file for tax. This file will give the tax authorities much greater audit opportunities than some of the listings currently required and thus it may not be useful anymore to impose these compliance obligations. Finally, it may be envisaged to refund VAT quicker if taxable persons comply with certain requirements of the (combined) model.

53. A combination of the split payment model with the central VAT monitoring database model will also increase the possible reduction of the VAT Gap. However, there are two important downsides compared to the first combination. Firstly, the combination of the split payment model and the central VAT monitoring database has a more limited scope than the combination of the split payment model and the data warehouse model. Indeed, the central VAT monitoring database would be applicable to all situations in which an invoice is issued. This is primarily obligatory for B2B transactions. Although this is a broader scope than the B2B transactions paid for by EFT, it still does not allow a tax authority to monitor B2C transactions for which no invoice is issued.
Secondly, there is no potential to reduce costs related to the central VAT monitoring database and there do not seem to be cost reductions related to combining the split payment model and the central VAT monitoring database. Indeed, the cost of implementing an e-invoicing platform cannot be broken up like the cost for creating and storing a standard audit file. Furthermore, the cost of the split payment model is primarily linked to investments and operational costs with the banking industry, whereas the cost of the central VAT monitoring database is primarily linked to investments and operational costs with the taxable persons. Therefore, implementing a combination of both models will not reduce costs significantly.

54. A combination of the split payment model and the certified taxable person model is also possible. The advantage is that it has a large scope (comparable to the first combination). However, the expected cost/benefit ratio is lower than the first combination.

Recommendations for next steps

- further data collection and data quality improvement is required in order to have more robust and more accurate data to estimate the potential costs and benefits of the different collection model. In general, this good quality data with regard to VAT across the EU can be used for various purposes (e.g. increase administrative cooperation, benchmark collection cost of VAT, regulatory impact assessments,…);

- for all models a detailed analysis is needed to investigate how the authorities could compensate additional costs incurred by taxable persons (or banks in the split payment model);

- based on the results of this Study, the split payment model, possibly in combination with a "*limited*" data warehouse model should be further investigated;

- it should be further investigated whether it is possible to compensate for the cash-flow impact in the split payment model by granting quicker VAT refunds and to reduce the compliance burden on taxable persons, e.g. by reducing the information obligations such as filing client listings, in case alternative collection models are implemented;

- a consultation and interviews with various stakeholders may be envisaged in order to further assess the impact of any selected model. However, in order to ensure that the information collected is useful, it is important that the details of the model (including information and compliance obligations for taxable persons and other stakeholders) are described in detail. This will allow stakeholders to better assess the impact of a specific model;

- whatever model is further investigated, it is important that the model is made obligatory in all Member States and that the implementation is fully harmonised in all Member States. Furthermore, an analysis should be made of the impact on the NPV of the model where the technology needed would be centralised in one EU platform instead of 27 different platforms, i.e. one for each Member State. Therefore, all Member States should contribute with relevant data and input to ensure harmonisation.

2 Objective of the Study

2.1 Introduction

55. In its Communication on a coordinated strategy to improve the fight against VAT fraud in the European Union,[5] presented in December 2008, the Commission indicated its intention to launch a reflection over a longer-term perspective concerning the management of the VAT system and in particular the ways in which businesses and tax authorities communicate with each other.

56. Within the VAT system as currently applied in the EU, businesses act as unpaid tax collectors. Taxable persons themselves periodically do a calculation of the amount of VAT they have to pay to, or get back from, the tax authorities.

57. For this (self-)assessment, for each tax period, taxable persons determine the VAT due on their outgoing transactions and the VAT they can claim back on their incoming transactions, and draw a balance between these amounts. This balance is either what the taxable person will have to pay to the tax authority or what the tax authority owes to the taxable person for that tax period.

58. The VAT return of the taxable person in principle summarises the data regarding the transactions performed during the tax period. However, in general, a VAT return does not provide detailed information on a transactional level.

59. Verification by the tax authority mostly happens *ex post*. This can lead to adjustments of the VAT initially declared by the taxable person. Although this system provides the tax authority with an easy tool to collect VAT, it also entails a number of disadvantages, e.g.:

- it relies heavily on compliance by the taxable person;
- the data submitted to the tax authority through the VAT return only allows for basic control checks;
- the current system is susceptible to fraudulent behaviour, which can only be detected during an *ex post* audit or through an efficient, effective fraud and risk-detection system;
- it is often difficult to achieve the collection of VAT *ex post* as the taxable person may in the meantime have disappeared or gone bankrupt.

60. Therefore, it is necessary to investigate whether there are methods for improving, simplifying and guaranteeing the collection of VAT revenue.

[5] COM(2008) 807 final.

2.2 Scope of our analysis

61. In the Final Report, we cover the following elements:

- an overview of all the alternatives identified;
- a detailed description of each of the four models selected. In particular we set out:
  - a detailed, step-by-step flowchart of how the collection process for the model would work,
  - the detailed roles and responsibilities of each of the stakeholders,
  - the sustainability of the model under different scenarios,
  - the reporting obligations required to make the model work,
  - the cash-flow impacts for each of the stakeholders,
  - whether the model should be mandatory or optional,
  - the costs and benefits for the stakeholders and best practices implemented or considered in other countries and other sectors;
- a high-level quantitative and qualitative assessment of the selected models (costs, benefits and feasibility);
- conclusions for each model when comparing its cost/benefit analysis to that for other models;
- recommendations.

3 Overview of all the selected alternatives and high-level impact assessment

62. The overview of all the alternatives consists of two parts. The first part covers an inventory of alternative VAT collection models. The second contains a high-level impact assessment of those alternatives.

3.1 Inventory of the different alternatives to improve and simplify VAT collection

3.1.1 Introduction

63. The Commission Steering Group has indicated that alternatives requiring changes to the fundamental rules of the EU VAT system are not in scope (e.g. changing the place of supply rules, introducing a general reverse charge) and should not be included in the inventory.

64. To construct an inventory of alternatives, we:

- developed a uniform description of each of the different alternatives;
- carried out desk research;
- developed a template to be completed by our Global Indirect Taxes Network;
- collected the answers from our Global Indirect Taxes Network;
- held a brainstorming workshop with the Multidisciplinary Dedicated Core Team to identify and classify the different alternatives and prepared a document for the brainstorming workshop with the Commission Steering Group;
- held a brainstorming workshop with the Commission Steering Group;
- held a conference call with the Global Multidisciplinary Expert Panel.

We identified multiple alternatives that all fit into one of the following three categories:

- alternatives that impact the payment of VAT;
- alternatives that increase the monitoring and audit capabilities of the tax authority;
- alternatives that increase compliance through the certification of software, service providers or taxable persons.

3.1.2 Our approach

65. In order to be able to compare and assess the various alternatives (see section 3.1.3), a uniform way of describing each of the alternatives is critical. In this regard, we have taken a three-layered approach.

66. First, we provide a high-level description of the alternative, in which we identify its key features and indicate which (if any) countries have implemented a similar alternative. Second, we present all the alternatives according to the same uniform, schematic model, showing how each works in practice. Third, we provide step-by-step details of how the different processes, such as sales and purchase transactions, payment/receipt of taxable amount and VAT, filing of VAT returns, collection of VAT, refunds of VAT and audit/monitoring, function under the alternative. In this step-by-step description we highlight in blue the steps which are different from the current VAT model.

67. It will be noticed that many of the alternatives included in the inventory can be combined. However, in order to maintain a clear overview and deliver a comprehensive inventory, we include only *"pure"* alternatives. That way, focus can be laid on design issues and the features of the core alternatives, without their being lost sight of in the wide variety of combinations.

68. One of the critical elements of each of the alternatives is whether it should be an option or an obligation for taxable persons to use it. In the inventory, we do not classify the alternatives as optional or mandatory, the reason being not to double the number of alternatives and keep the inventory as understandable as possible. Hence, the descriptions of the alternatives as such do not change depending on whether or not they should be optional.

69. Finally, when describing the alternatives, the place of establishment of the taxable person making the supply or of the customer is not included. Nor do we differentiate among domestic, intra-Community and import/export transactions in the descriptions.

70. In phase 1 we do not yet explore in the fullest of detail all the characteristics that might impact the various stakeholders' positions.

3.1.3 Overview of the current VAT model and its potential alternatives

3.1.3.1 Alternative 0 – Current VAT model

Description

71. Within the VAT system as currently applied in the EU, taxable persons act as the collectors of VAT. Taxable persons charge VAT on the invoices they issue to their customers. Customers pay their suppliers both the price of the goods or services purchased and any VAT due. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business. Taxable persons periodically calculate the amount of VAT they have to pay to, or get back from, the tax authority.

72. In their periodic VAT returns, taxable persons report VAT due and deductible VAT and calculate the balance between these amounts. The balance is either an amount due, to be paid by the taxable person to the tax authority, or an amount receivable, to be paid back to the taxable person by the tax authority.

73. Further to the VAT return, the taxable person either pays the balance of VAT due to the tax authority or the tax authority makes a refund to the taxable person. Verification by the tax authority mostly happens "*ex post*".

High-level diagram

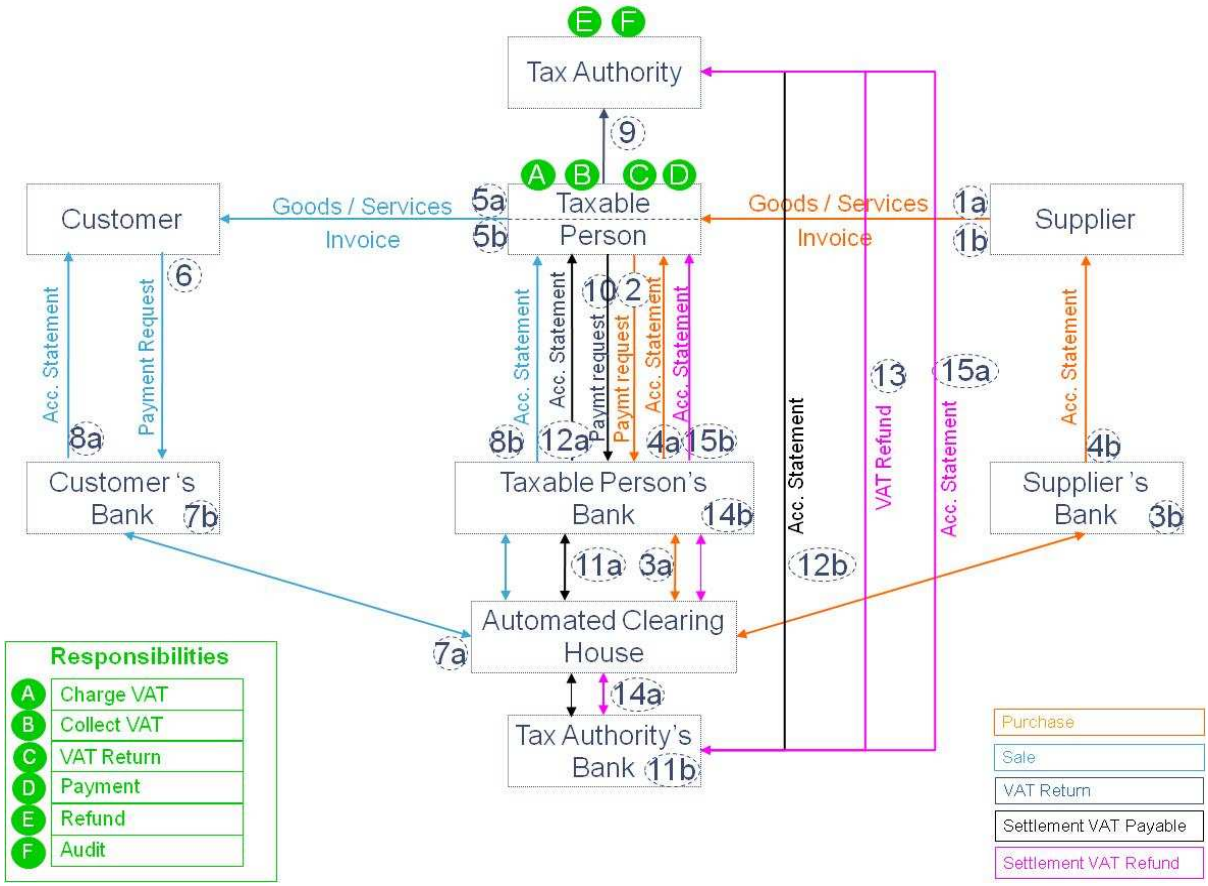


Figure 1 – Alternative 0 – Current VAT model

Process description

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the funds.

Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.

Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.

F) Auditing

Tax Authority can perform an audit on the correctness of the payment and deduction of the VAT only once the transactions have taken place ("*ex post*") and once the transactions have been reported (in a VAT return and/or other listings).

3.1.3.2 Alternatives that impact the payment of VAT

3.1.3.2.1 Alternative 1 – Automated split payment – Blocked VAT bank account at the level of the automated clearing house

Description

74. Under this alternative, the automated clearing house plays the role of the VAT collector and pays the VAT to the tax authority.

75. Taxable persons are still responsible for charging the correct amount of VAT on the invoice. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

76. The taxable person instructs his bank to pay the price of the goods or services purchased and any VAT due. At the level of the automated clearing house, the payment is split into the taxable amount and the VAT amount. Blocked VAT bank accounts are created for each taxable person, into which the VAT is placed on a real-time basis at the time of payment in respect of the transaction. In order to facilitate this system, the payment request data is enriched with VAT data, which allows the clearing house to make the split.

77. At the time of this payment, the tax authority is informed of it. This allows the tax authority to keep track of the VAT status of all taxable persons in the system on a real-time basis. For this purpose, the tax authority keeps current VAT accounts, which are credited when the taxable person pays VAT and debited when he receives VAT in his blocked VAT bank account. Funds in the blocked VAT bank account can only be transferred to another taxable person's blocked VAT bank account with the approval of the tax authority.

78. If the taxable person wants to purchase goods or services from a supplier, he makes a payment request with enriched payment data. Depending on his payment request (i.e. the amount of VAT due) and the status of his blocked VAT bank account at clearing and settlement level, he can use the VAT credit in his blocked VAT bank account or funds in his (regular) bank account to fulfil his obligation to pay the VAT due that is charged on the invoice he receives from his supplier.

79. Each VAT period, the taxable person and the tax authority settle the total VAT that is payable or to be refunded.

High-level diagram[6]

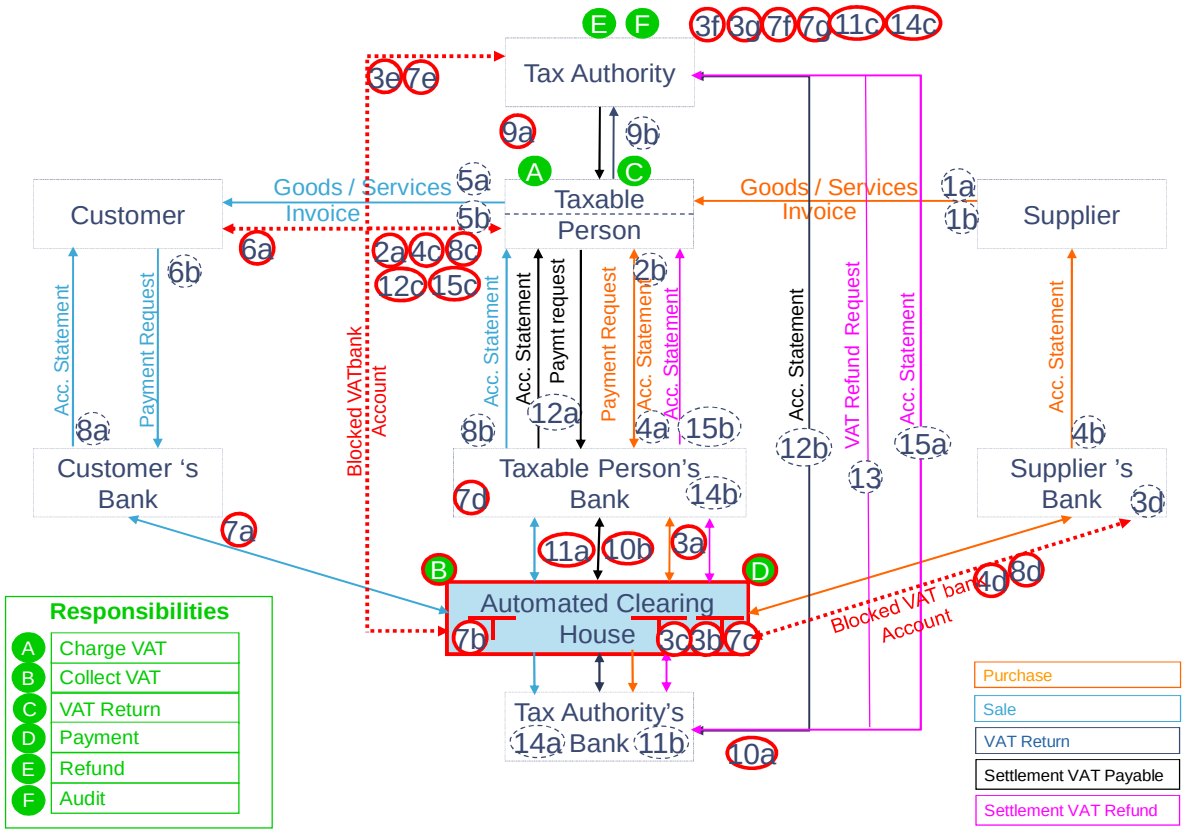


Figure 2 – Alternative 1 – Automated split payment – Blocked VAT bank account at the level of the Automated Clearing House

Process description[7]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2a	Taxable Person verifies the status of his blocked VAT bank account at Automated Clearing House to determine whether he should pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank

[6] Changes compared to the Current VAT Model are circled in red.
[7] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	account to pay the VAT amount.
Step 2b	Taxable Person makes a payment request to Taxable Person's Bank for the relevant amount. The payment request includes additional *"enriched"* data relating to the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House, allowing Automated Clearing House to identify the split payment.
Step 3b	Automated Clearing House verifies whether the VAT has been debited from the Taxable Person's bank account. If not, Automated Clearing House debits the Taxable Person's blocked VAT bank account with the VAT amount due.
Step 3c	Supplier's blocked VAT bank account is credited with the VAT amount.
Step 3d	Supplier's bank account is credited with the taxable amount.
Step 3e	Automated Clearing House passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Taxable Person and Supplier on a real-time basis on a VAT current account.
Step 3f	The VAT current account of Taxable Person at Tax Authority's level is credited with the VAT amount.
Step 3g	The VAT current account of Supplier at Tax Authority's level is debited with the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
Step 4c	Automated Clearing House makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 4d	Automated Clearing House makes an account statement of the blocked VAT bank account available to Supplier and Tax Authority.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6a	Customer verifies the status of his blocked VAT bank account at Automated Clearing House to determine whether he has to pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank account to pay the VAT amount.
Step 6b	Customer makes a payment request to Customer's bank for the relevant amount. The payment request includes additional *"enriched"* data relating to the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).

Step 7a	Customer's Bank debits Customer's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House, allowing Automated Clearing House to identify the split payment.
Step 7b	Automated Clearing House verifies whether the VAT has been debited from Customer's bank account. If not, Automated Clearing House debits Customer's blocked VAT bank account with the VAT amount due.
Step 7c	Taxable Person's blocked VAT bank account is credited with the VAT amount.
Step 7d	Taxable Person's bank account is credited with the taxable amount.
Step 7e	Automated Clearing House passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Customer and Taxable Person on a real-time basis on a VAT current account.
Step 7f	The VAT current account of Customer at Tax Authority's level is credited with the VAT amount.
Step 7g	The VAT current account of Taxable Person at Tax Authority's level is debited with the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8c	Automated Clearing House makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 8d	Automated Clearing House makes an account statement of the blocked VAT bank account available to Customer and Tax Authority.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Tax Authority provides Taxable Person with an overview of all transactions booked on his VAT current account (and/or a pre-filled VAT return).
Step 9b	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10a	Tax Authority makes a VAT balance payment request to Automated Clearing House to transfer the VAT balance due as reported in the VAT return into Tax Authority's bank account.
Step 10b	If the balance of the blocked VAT bank account is not sufficient, Automated Clearing House issues a direct debit instruction to Taxable Person's Bank for the difference. Taxable Person's Bank executes the direct debit instruction and the blocked VAT bank account is credited with the difference.

Step 11a	Upon execution of the VAT balance payment request, the blocked VAT bank account of Taxable Person is debited with the VAT balance due.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 11c	Taxable Person's VAT current account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
Step 12c	Automated Clearing House make an account statement available for the blocked VAT bank account of Taxable Person.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a VAT balance refund request to Automated Clearing House to transfer the refundable VAT balance per the VAT return into Taxable Person's bank account.
Step 14a	Tax Authority's bank account is debited with the refundable VAT balance.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 14c	Taxable Person's VAT current account is debited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
Step 15c	Automated Clearing House make an account statement available for the blocked VAT bank account of Taxable Person.
F) Auditing	
Auditing by Tax Authority can partially be done in real time when the payments take place as Tax Authority can monitor movements on the blocked VAT bank accounts. Even though all outgoing payments from the blocked VAT bank account system and the banking system are triggered by Tax Authority, they can still be subject to individual audits.	

3.1.3.2.2 Alternative 2 – Automated split payment – Blocked VAT bank account at the level of the taxable person's bank

Description

80. Under this alternative, the taxable person's bank plays the role of the VAT collector and pays the VAT to the tax authority.

81. Taxable persons are still responsible for charging the correct amount of VAT on the invoice. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

82. The taxable person instructs his bank to pay the price of the goods or services purchased and any VAT due. The bank splits the payment into the taxable amount and the VAT amount. Blocked VAT bank accounts are created for each taxable person, into which the VAT is placed on a real-time basis at the time of payment in respect of the transaction. In order to facilitate this system, the payment request data is enriched with VAT data, which allows the taxable person's bank to make the split.

83. At the time of this payment, the tax authority is informed of the payment. This allows the tax authority to keep track of the VAT status of all taxable persons in the system on a real-time basis. For this purpose, the tax authority keeps current VAT accounts, which are credited when the taxable person pays VAT and debited when he receives VAT in his blocked VAT bank account. Funds in the blocked VAT bank account can only be transferred to another taxable person's blocked VAT bank account with the approval of the tax authority.

84. If the taxable person wants to purchase goods or services from a supplier, he makes a payment request with enriched payment data. Depending on his payment request (i.e. the amount of VAT due) and the status of his blocked VAT bank account vis-à-vis the bank, he can use the VAT credit in his blocked VAT bank account or funds in his (regular) bank account to fulfil his obligation to pay the VAT due that is charged on the invoice he receives from his supplier.

85. Each VAT period, the taxable person and the tax authority settle the total VAT that is payable or to be refunded.

High-level diagram[8]

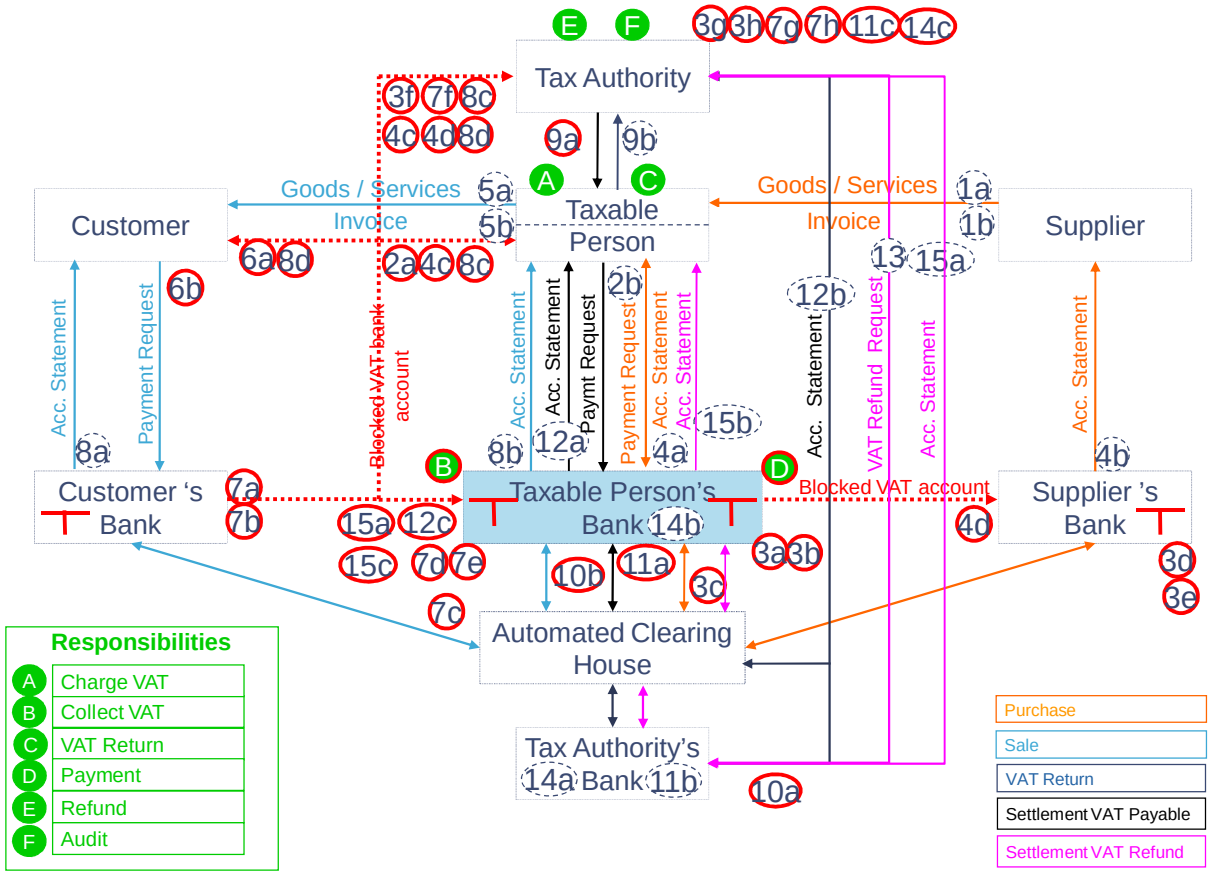


Figure 3 – Alternative 2 – Automated split payment – Blocked VAT bank account at the level of the taxable person's bank

Process description[9]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme of affairs, *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2a	Taxable Person verifies the status of his blocked VAT bank account at Taxable Person's Bank to determine whether he should pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank account

[8] Changes compared to the Current VAT Model are circled in red.
[9] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	to pay the VAT amount.
Step 2b	Taxable Person makes a payment request to Taxable Person's Bank for the relevant amount. The payment request includes additional *"enriched"* data regarding the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account.
Step 3b	If applicable, Taxable Person's Bank debits Taxable Person's blocked VAT bank account with the VAT amount.
Step 3c	Taxable Person's Bank provides payment information to Automated Clearing House.
Step 3d	Supplier's blocked VAT bank account is credited with the VAT amount.
Step 3e	Supplier's bank account is credited with the taxable amount.
Step 3f	Taxable Person's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Taxable Person and Supplier on a real-time basis on a VAT current account.
Step 3g	The VAT current account of Taxable Person at Tax Authority's level is credited with the VAT amount.
Step 3h	The VAT current account of Supplier at Tax Authority's level is debited with the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
Step 4c	Taxable Person's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 4d	Supplier's Bank makes an account statement of the blocked VAT bank account available to Supplier and Tax Authority.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6a	Customer verifies the status of his blocked VAT bank account at Customer's Bank to determine whether he has to pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank account to pay the VAT amount.
Step 6b	Customer makes a payment request to Customer's bank for the relevant amount. The payment request includes additional *"enriched"* data regarding the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).
Step 7a	Customer's Bank debits Customer's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account.

Step 7b	If applicable, Customer's Bank debits Customer's blocked VAT bank account with the VAT amount due.
Step 7c	Customer's Bank provides payment information to Automated Clearing House.
Step 7d	Taxable Person's blocked VAT bank account is credited with the VAT amount.
Step 7e	Taxable Person's bank account is credited with the taxable amount.
Step 7f	Customer's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Customer and Taxable Person on a real-time basis on a VAT current account.
Step 7g	The VAT current account of Customer at Tax Authority's level is credited with the VAT amount.
Step 7h	The VAT current account of Taxable Person at Tax Authority's level is debited with the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8c	Taxable Person's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 8d	Customer's Bank makes an account statement of the blocked VAT bank account available to Customer and Tax Authority.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Tax Authority provides Taxable Person with an overview of all transactions booked on his VAT current account (and/or a pre-filled VAT return).
Step 9b	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10a	Tax Authority makes a VAT balance payment request to Automated Clearing House to transfer the VAT balance due as reported in the VAT return into Tax Authority's bank account.
Step 10b	If the balance of the blocked VAT bank account is not sufficient, Tax Authority's Bank issues a direct debit instruction to Taxable Person's Bank for the difference. Taxable Person's Bank executes the direct debit instruction and the blocked VAT bank account is credited with the difference.

Step 11a	Upon execution of the VAT balance payment request, the blocked VAT bank account of Taxable Person is debited with the VAT balance due.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 11c	Taxable Person's VAT current account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
Step 12c	Taxable Person's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.

E) Settlement of VAT refund	
Step 13	Tax Authority makes a VAT balance refund request to Automated Clearing House to transfer the refundable VAT balance as reported in the VAT return to Taxable Person's bank account.
Step 14a	Tax Authority's bank account is debited with the refundable VAT balance.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 14c	Taxable Person's current VAT current account is debited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
Step 15c	Taxable Person's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
F) Auditing	
Auditing by Tax Authority can partially be done in real time when the payments take place as Tax Authority can monitor movements on the blocked VAT bank accounts. Even though all outgoing payments from the blocked VAT bank account system and the banking system are triggered by Tax Authority, they can still be subject to individual audits.	

3.1.3.2.3 Alternative 3 – Automated split payment – Blocked VAT bank account at the level of the tax authority's bank

Description

86. Under this alternative, the tax authority's bank plays the role of the VAT collector and pays the VAT to the tax authority.

87. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

88. The taxable person instructs his bank to pay the price of the goods or services purchased and any VAT due. At the automated clearing house level, the payment is split into the taxable amount and the VAT. Blocked VAT bank accounts are created for each taxable person, into which the VAT is placed on a real-time basis at the time of payment in respect of the transaction. In order to facilitate this system, the payment request data is enriched with VAT data that allows the automated clearing house to make the split.

89. At the time of this payment, the tax authority is informed of the payment. This allows the tax authority to keep track of the VAT status of all taxable persons in the system on a real-time basis. For this purpose, the tax authority keeps current VAT accounts, which are credited when the taxable person pays VAT and debited when he receives VAT in his blocked VAT bank account. Funds in the blocked VAT bank account can only be transferred to another taxable person's blocked VAT bank account with the approval of the tax authority.

90. If the taxable person wants to purchase goods or services from a supplier, he makes one payment request with enriched payment data. Depending on his payment request (i.e. the amount of VAT due) and the status of his blocked VAT bank account at the tax authority's bank level, he can use the VAT credit in his blocked VAT bank account or funds in his (regular) bank account to fulfil his obligation to pay the VAT due that is charged on the invoice he receives from his supplier.

91. Each VAT period, the taxable person and the tax authority settle the total VAT that is payable or to be refunded.

High-level diagram[10]

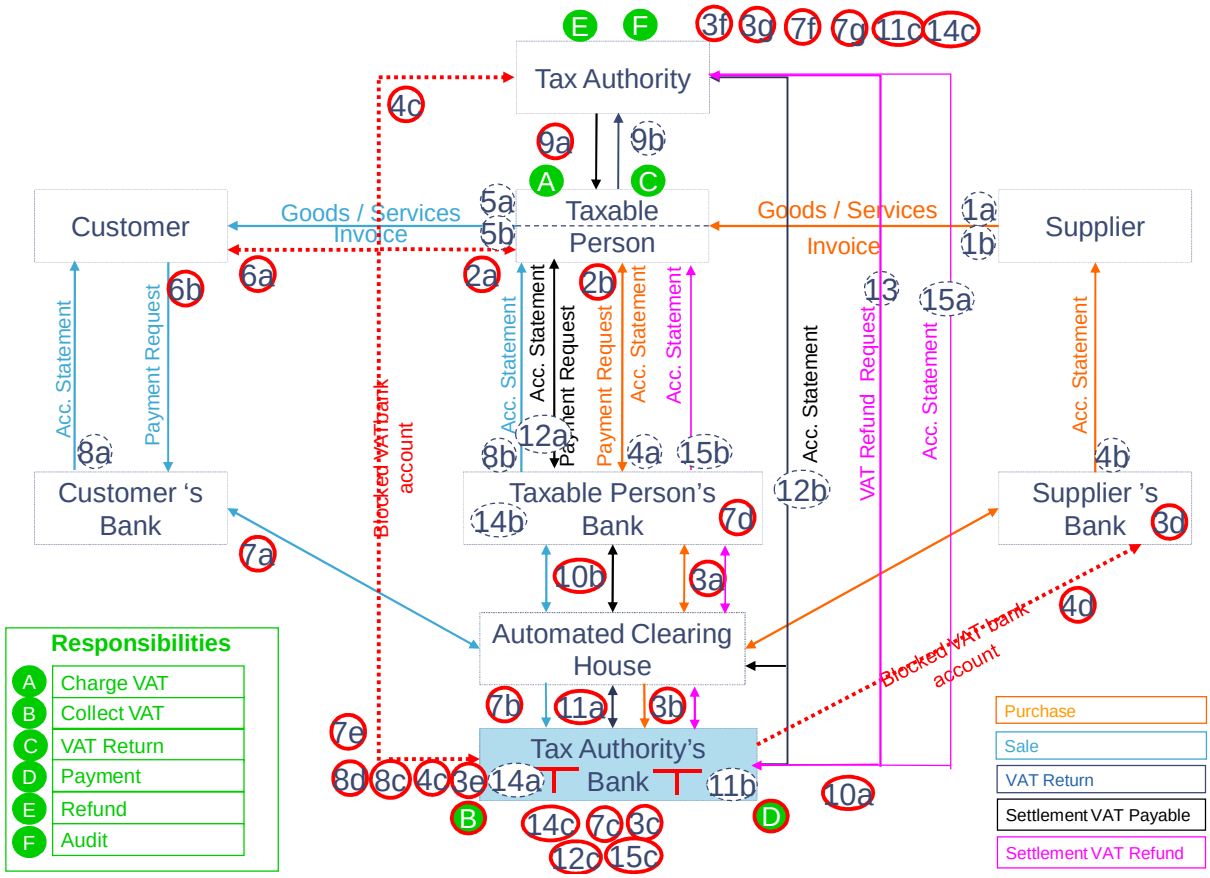


Figure 4 – Alternative 3 – Automated split payment – Blocked VAT bank account at level of the tax authority's bank

Process Description[11]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2a	Taxable Person verifies the status of his blocked VAT bank account at Tax Authority's Bank to determine whether he should pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank

[10] Changes compared to the Current VAT Model are circled in red.
[11] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	account to pay the VAT amount.
Step 2b	Taxable Person makes a payment request to Taxable Person's Bank for the relevant amount. The payment request includes additional *"enriched"* data regarding the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House, allowing Automated Clearing House to identify the split payment.
Step 3b	Tax Authority's Bank verifies whether the VAT has been debited from the Taxable Person's bank account. If not, Tax Authority's Bank debits the Taxable Person's blocked VAT bank account with the VAT amount due.
Step 3c	Supplier's blocked VAT bank account is credited with the VAT amount.
Step 3d	Supplier's bank account is credited with the taxable amount.
Step 3e	Tax Authority's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Taxable Person and Supplier on a real-time basis on a VAT current account.
Step 3f	The VAT current account of Taxable Person at Tax Authority's level is credited with the VAT amount.
Step 3g	The VAT current account of Supplier at Tax Authority's level is debited with the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
Step 4c	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 4d	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Supplier and Tax Authority.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6a	Customer verifies the status of his blocked VAT bank account at Tax Authority's Bank to determine whether he has to pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank account to pay the VAT amount.

Step 6b	Customer makes a payment request to Customer's bank for the relevant amount. The payment request includes additional *"enriched"* data regarding the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).
Step 7a	Customer's Bank debits Customer's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House, allowing Automated Clearing House to identify the split payment.
Step 7b	Tax Authority's Bank verifies whether the VAT has been debited from Customer's bank account. If not, Tax Authority's Bank debits Customer's blocked VAT bank account with the VAT amount due.
Step 7c	Taxable Person's blocked VAT bank account is credited with the VAT amount.
Step 7d	Taxable Person's bank account is credited with the taxable amount.
Step 7e	Tax Authority's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Customer and Taxable Person on a real-time basis on a VAT current account.
Step 7f	The VAT current account of Customer at Tax Authority's level is credited with the VAT amount.
Step 7g	The VAT current account of Taxable Person at Tax Authority's level is debited with the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8c	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 8d	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Customer and Tax Authority.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Tax Authority provides Taxable Person with an overview of all transactions booked on his VAT current account (and/or a pre-filled VAT return).
Step 9b	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10a	Tax Authority makes a VAT balance payment request to Tax Authority's Bank to transfer the VAT balance due as reported in the VAT return into Tax Authority's bank account.

Step 10b	If the balance of the blocked VAT bank account is not sufficient, Tax Authority's Bank issues a direct debit instruction to Taxable Person's Bank for the difference. Taxable Person's Bank executes the direct debit instruction and the blocked VAT bank account is credited with the difference.
Step 11a	Upon execution of the VAT balance payment request, the blocked VAT bank account of Taxable Person at Tax Authority's Bank is debited with the VAT balance due.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 11c	Taxable Person's VAT current account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
Step 12c	Tax Authority's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a VAT balance refund request to Automated Clearing House to transfer the refundable VAT balance as reported in the VAT return to Taxable Person's bank account.
Step 14a	Tax Authority's bank account is debited with the refundable VAT balance.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 14c	Taxable Person's VAT current account is debited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
Step 15c	Tax Authority's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
F) Auditing	
Auditing by Tax Authority can partially be done in real time when the payments take place as Tax Authority can monitor movements on the blocked VAT bank accounts. Even though all outgoing payments from the blocked VAT bank account system and the banking system are triggered by Tax Authority, they can still be subject to individual audits.	

3.1.3.2.4 Alternative 4 – Manual split payment

Description

92. Under this alternative, the tax authority's bank plays the role of the VAT collector and pays the VAT to the tax authority.

93. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

94. Blocked VAT bank accounts are created for each taxable person, into which the VAT is placed on a real-time basis at the time of payment in respect of the transaction. The taxable person instructs his bank to perform two payments, i.e. a payment of the price of the goods or services excluding the VAT amount to the taxable person's bank account and a payment of the VAT amount to a blocked VAT bank account at the level of the tax authority's bank.

95. At the time of this payment, the tax authority is informed of the payment. This allows the tax authority to keep track of the VAT status of all taxable persons in the system on a real-time basis. For this purpose, the tax authority keeps current VAT accounts, which are credited when the taxable person pays VAT and debited when he receives VAT in his blocked VAT bank account. Funds in the blocked VAT bank account can only be transferred to another taxable person's blocked VAT bank account with the approval of the tax authority.

96. If the taxable person wants to purchase goods or services from a supplier, he makes a manual payment request for the taxable amount and for the VAT amount. Depending on his payment request (i.e. the amount of VAT due) and the status of his blocked VAT bank account at the level of the tax authority's bank, he can use the VAT credit in his blocked VAT bank account or funds in his (regular) bank account to fulfil his obligation to pay the VAT due that is charged on the invoice he receives from his supplier.

97. Each VAT period, the taxable person and the tax authority settle the total VAT that is payable or to be refunded.

98. Reference is made to Azerbaijan, where a similar model exists.

High-level diagram[12]

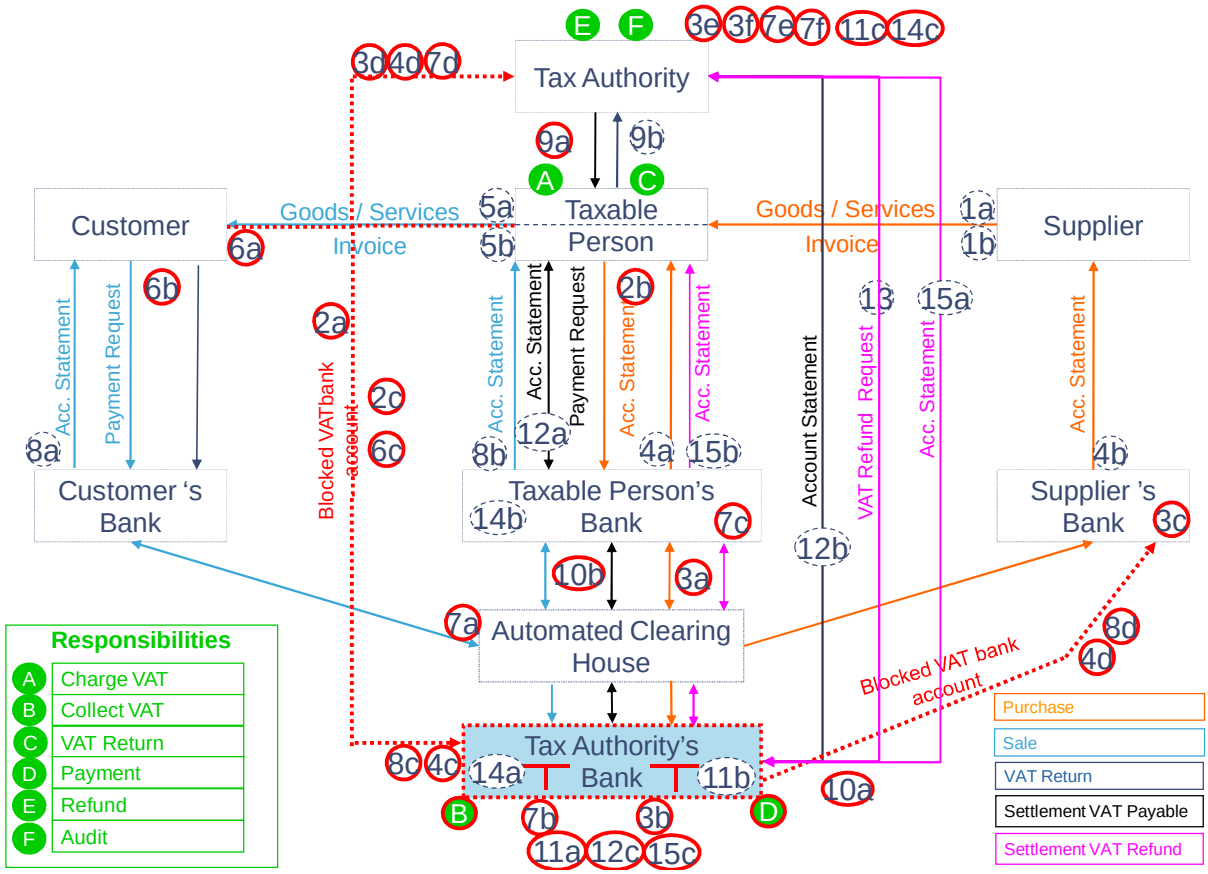


Figure 5 – Alternative 4 – Manual split payment

Process description[13]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2a	Taxable Person verifies the status of his blocked VAT bank account at Tax Authority's Bank to determine whether he should pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank

[12] Changes compared to the Current VAT Model are circled in red.
[13] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	account to pay the VAT amount.
Step 2b	Taxable Person makes a payment request to Taxable Person's Bank to pay the taxable amount to Supplier's bank account.
Step 2c	If sufficient funds are not available in the Taxable Person's blocked VAT bank account, Taxable Person makes a payment request to Taxable Person's Bank to pay the VAT amount to Supplier's blocked VAT bank account. If sufficient funds are available, Taxable Person makes a payment request to Tax Authority's Bank to transfer the VAT amount from his blocked VAT bank account into Supplier's blocked VAT bank account.
Step 3a	Taxable Person's Bank debits Taxable Person's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House.
Step 3b	Supplier's blocked VAT bank account is credited with the VAT amount.
Step 3c	Supplier's bank account is credited with the taxable amount.
Step 3d	Tax Authority's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Taxable Person and Supplier on a real-time basis on a VAT current account.
Step 3e	The VAT current account of Taxable Person at Tax Authority's level is credited with the VAT amount.
Step 3f	The VAT current account of Supplier at Tax Authority's level is debited with the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
Step 4c	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 4d	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Supplier and Tax Authority.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6a	Customer verifies the status of his blocked VAT bank account at Tax Authority's Bank to determine whether he has to pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank account to pay the VAT amount.
Step 6b	Customer makes a payment request to Customer's bank to pay the taxable amount to Taxable Person's bank account.

Step 6c	If sufficient funds are not available on the Customer's blocked VAT bank account, Customer makes a payment request to Customer's Bank to pay the VAT amount to Taxable Person's blocked VAT bank account. If sufficient funds are available, Customer makes a payment request to Tax Authority's Bank to transfer the VAT amount from his blocked VAT bank account to Taxable Person's blocked VAT bank account.
Step 7a	Customer's Bank debits Customer's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's blocked VAT bank account is credited with the VAT amount.
Step 7c	Taxable Person's bank account is credited with the taxable amount.
Step 7d	Tax Authority's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Customer and Taxable Person on a real-time basis on a VAT current account.
Step 7e	The VAT current account of Customer at Tax Authority's level is credited with the VAT amount.
Step 7f	The VAT current account of Taxable Person at Tax Authority's level is debited with the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8c	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 8d	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Customer and Tax Authority.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Tax Authority provides Taxable Person with an overview of all transactions booked on his VAT current account (and/or a pre-filled VAT return).
Step 9b	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10a	Tax Authority makes a VAT balance payment request to Tax Authority's Bank to transfer the VAT balance due as reported in the VAT return into Tax Authority's bank account.

Step 10b	If the balance of the blocked VAT bank account is not sufficient, Tax Authority's Bank issues a direct debit instruction to Taxable Person's Bank for the difference. Taxable Person's Bank executes the direct debit instruction and the blocked VAT bank account is credited with the difference.
Step 11a	Upon execution of the VAT balance payment request, the blocked VAT bank account of Taxable Person at Tax Authority's Bank is debited with the VAT balance due.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 11c	Taxable Person's VAT current account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
Step 12c	Tax Authority's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a VAT balance refund request to Automated Clearing House to transfer the refundable VAT balance as reported in the VAT return to Taxable Person's bank account.
Step 14a	Tax Authority's bank account is debited with the refundable VAT balance.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 14c	Taxable Person's VAT current account is debited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
Step 15c	Tax Authority's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
F) Auditing	
Auditing by Tax Authority can partially be done in real time when the payments take place as Tax Authority can monitor movements on the blocked VAT bank accounts. Even though all outgoing payments from the blocked VAT bank account system and the banking system are triggered by Tax Authority, they can still be subject to individual audits.	

3.1.3.2.5 Alternative 5 – Automated split payment in the case of credit card payments

Description

99. This alternative is only applicable to transactions that are paid for by means of a credit card.

100. Under this alternative, any time a customer pays with a credit card, the transaction is registered and monitored by the taxable person's bank (acquiring bank). The taxable person is still responsible for charging the correct amount of VAT but he never collects any VAT. Instead, the VAT is split off into a blocked VAT bank account (i.e. the Supplier's VAT bank account in credit). The automated split payment happens based on enriched payment data, which needs to be provided when the credit card terminal is used.

101. If the taxable person wants to purchase goods or services from another supplier and uses his credit card, a split payment is made, but no VAT credit is reported on a VAT holding account held in the name of the taxable person.

102. This alternative is applicable to both business-to-business (B2B) and business-to-consumer (B2C) transactions.

103. The payment information is moreover transferred to the tax authority in real time. In this respect, the tax authority knows the taxable amount that should, at least, be reported in the VAT return of the taxable period.

104. Reference is made to Turkey, where a similar model exists.

High-level diagram[14]

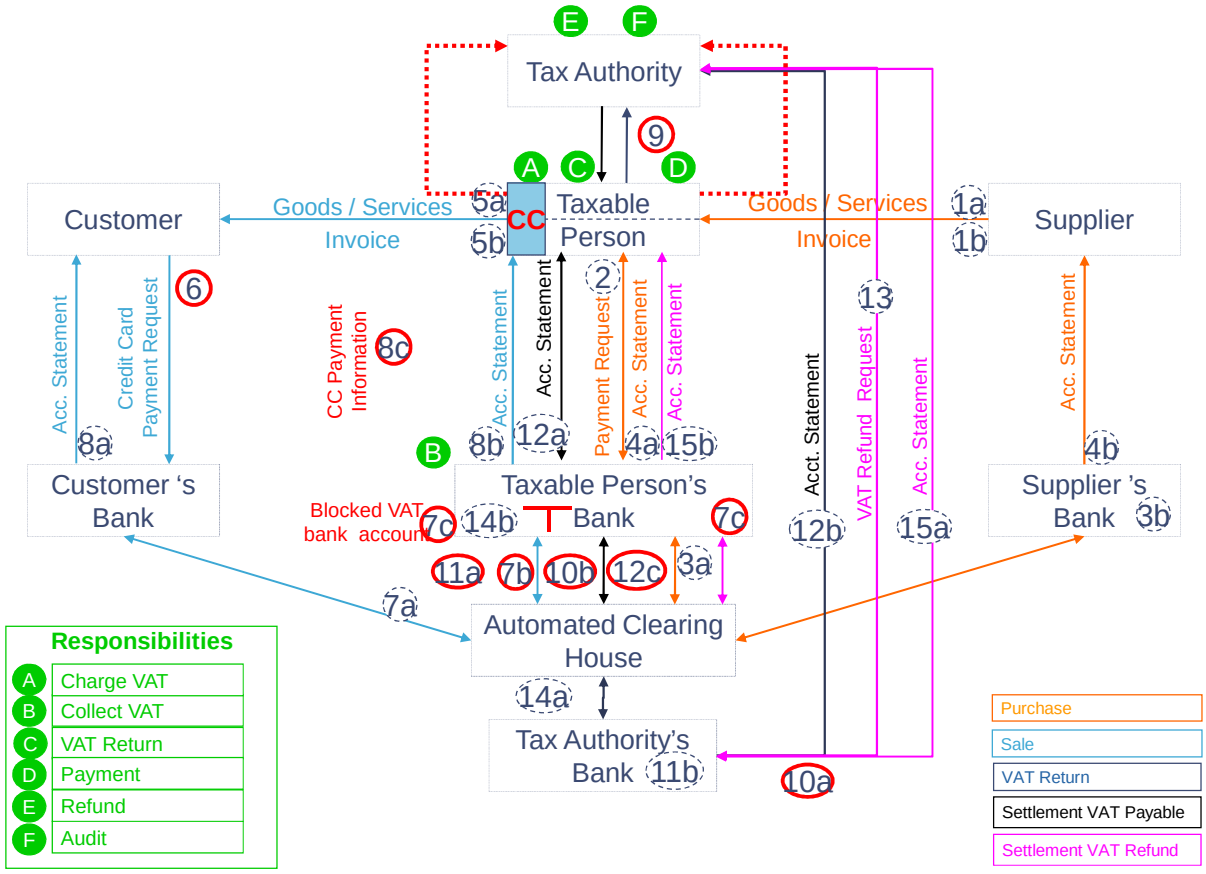


Figure 6 – Alternative 5 – Automated split payment in the case of credit card payments

Process description[15]

A) Purchase transaction	
In a normal business environment, a Taxable Person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).

[14] Changes compared to the Current VAT Model are circled in red.
[15] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a credit card payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount). The payment request includes additional "enriched" data.
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's Bank identifies the split payment based on enriched payment data.
Step 7c	Taxable Person's blocked VAT bank account is credited with the VAT amount.
Step 7d	Taxable Person's bank account is credited with the taxable amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8c	Taxable Person's Bank also transfers credit card payment information to the Tax Authority in real time.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he reports the net VAT balance and files this return with the Tax Authority. The Tax Authority can detect fraud by comparing the taxable amount in Taxable Person's VAT return with the total amount of sales using credit cards.
Settlement of the VAT balance	
At the end of the taxable period, the Taxable Person either has to pay VAT to the Tax Authority or may be entitled to a refund.	
D) Settlement of VAT payable	

Step 10a	Tax Authority makes a VAT balance payment request to Automated Clearing House to transfer the VAT balance due as reported in the VAT return into Tax Authority's bank account.
Step 10b	If the balance of the blocked VAT bank account is not sufficient, Tax Authority's Bank issues a direct debit instruction to Taxable Person's Bank for the difference. Taxable Person's Bank executes the direct debit instruction and the blocked VAT bank account is credited with the difference.
Step 11a	Upon execution of the VAT balance payment request, the blocked VAT bank account of Taxable Person is debited with the VAT balance due.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
Step12c	Taxable Person's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account for the refundable VAT balance and provides payment information to the Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the VAT refundable balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Auditing by Tax Authority can partially be done in real time when the payments take place as Tax Authority can monitor movements on the blocked VAT bank accounts. Even though all outgoing payments from the blocked VAT bank account system and the banking system are triggered by Tax Authority, they can still be subject to individual audits.	

3.1.3.3 Alternatives that increase the monitoring and audit capabilities of the tax authority

3.1.3.3.1 Alternative 6 – Central VAT monitoring database

Description

105. Under this alternative, all invoice data of a taxable person are sent to a central VAT monitoring database (*"push-model"*). This database can be managed by the tax authority, by a third party or by a public-private body.

106. No changes are made to the VAT collection model, but the possibilities for real-time auditing and action by the tax authority to investigate fraud are increased.

107. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

108. However, invoice data should be sent electronically and in real time to a central VAT monitoring database. It may be envisaged that, on the basis of this invoice data, a pre-filled VAT return is presented to the taxable person.

109. Reference is made to Brazil, South-Korea and Tanzania where a similar model is being implemented.

High-level diagram[16]

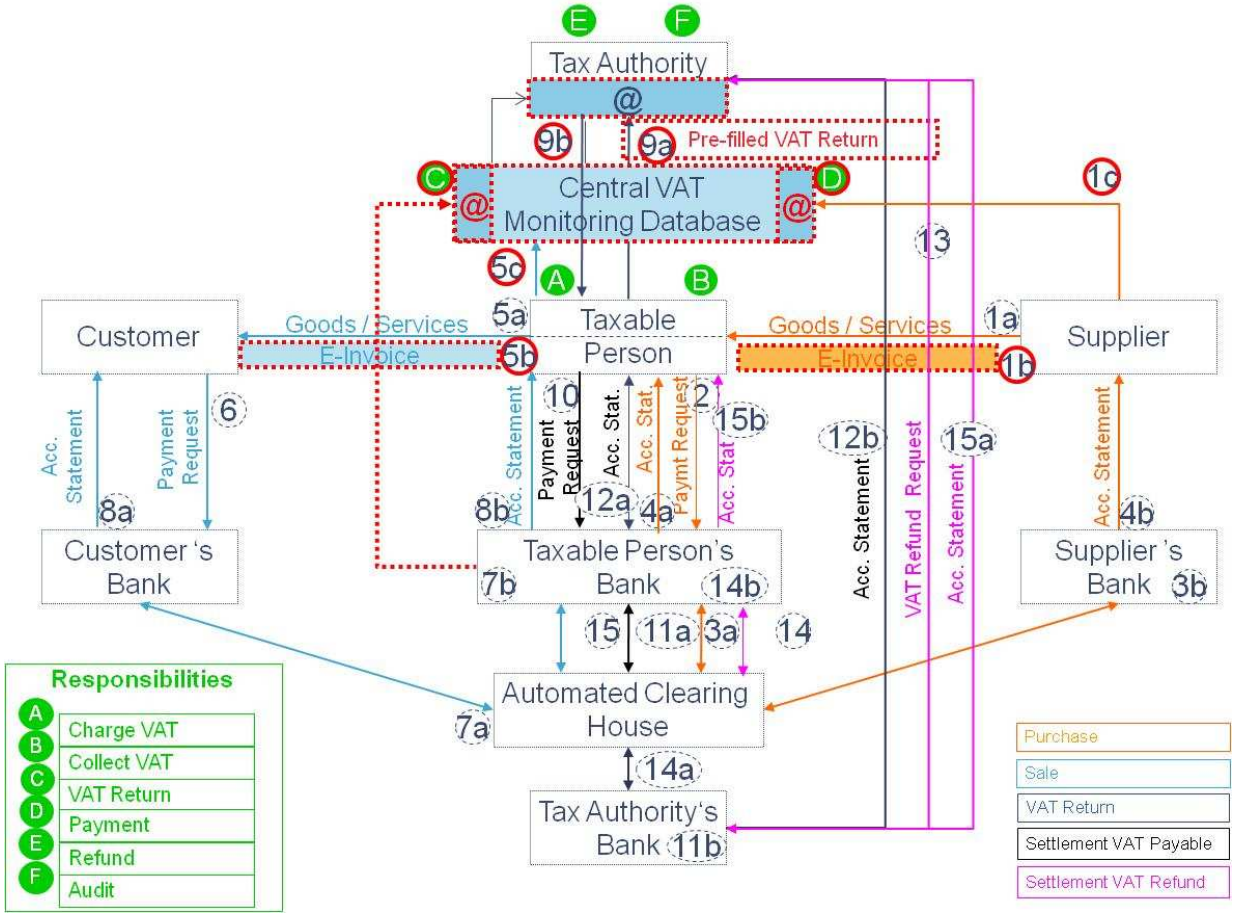


Figure 7 – Alternative 6 – Central VAT monitoring database

Process description[17]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an electronic invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 1c	The electronic invoice data is sent to the Central VAT Monitoring Database.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.

[16] Changes compared to the Current VAT Model are circled in red.
[17] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an electronic invoice to Customer, stating the taxable amount and the VAT amount.
Step 5c	The electronic invoice data is sent to the Central VAT Monitoring Database.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Taxable Person receives a pre-filled VAT return based on the invoice data sent electronically to the Central VAT Monitoring Database. The VAT return states the net VAT balance.
Step 9b	Taxable Person has to approve or amend, sign and submit the VAT return.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.

E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Under this alternative, Tax Authority is able to monitor and audit invoices, flows and the corresponding reporting in the VAT return in real time. Tax Authority is also able to use risk-profiling software to identify suspicious transactions as soon as the invoice data is made available. Tax Authority can use these risk indicators to immediately initiate further investigations and site audits to stop fraudulent activity and secure the collection of VAT. A refund of the net VAT balance could be refused if no invoice data has been sent to the central VAT monitoring database.	

3.1.3.3.2 Alternative 7 – Central VAT monitoring through direct access by the tax authority to the taxable person's system

Description

110. Under this alternative, the taxable person uploads predefined transaction data structured in an agreed format into a data warehouse. The details could be based on the Standard Audit File for Tax (SAF-T) as laid down in the OECD Guidance. Data includes invoice data, proof of delivery and payment data, i.e. all data allowing a VAT audit. The tax authority is given direct access to the transaction data of a taxable person in the data warehouse. If need be, the tax authority can pull out the data as needed to perform real-time VAT monitoring and mitigate risks of VAT fraud (*"pull-model"*). The tax authority only has direct access to the set of data stored in the data warehouse.

111. No changes are made to the VAT collection model, but the possibilities for swift and remote auditing and intervention are increased.

112. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

113. It may be envisaged that, at the end of the taxable period, the tax authority pulls the transaction data out of the taxable person's system and produces a pre-filled VAT return.

High-level diagram[18]

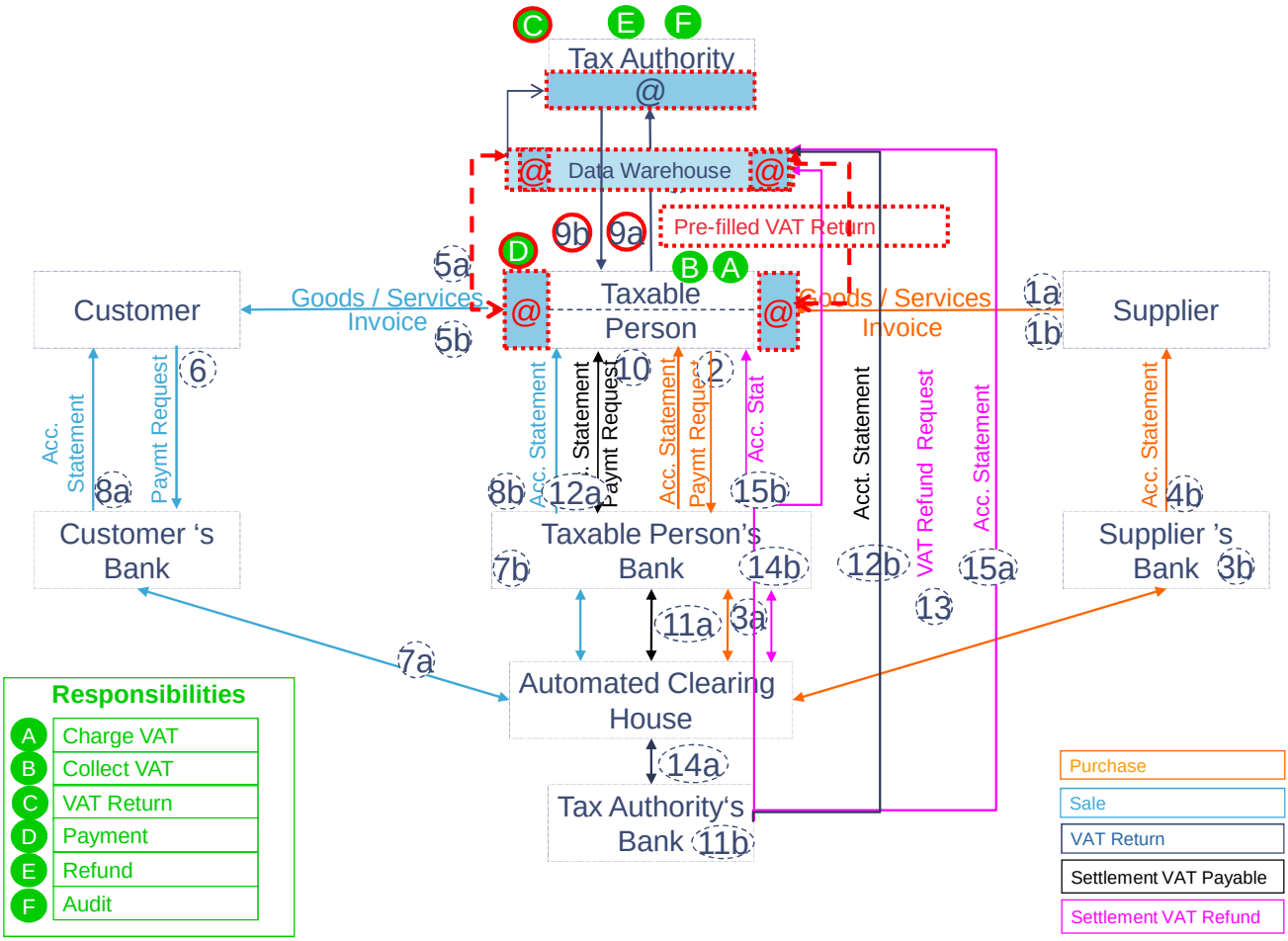


Figure 8 – Alternative 7 – Central VAT monitoring through direct access by the tax authority to the taxable person's system

Process description[19]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).

[18] Changes compared to the Current VAT Model are circled in red.
[19] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Taxable Person receives a pre-filled VAT return based on the transaction data pulled out of the data warehouse by Tax Authority. The VAT return reports the net VAT balance.
Step 9b	Taxable Person has to approve or amend, sign and submit the VAT return.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.

Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Under this alternative, Tax Authority is able to monitor, consult and audit invoices, transactions, related payments, orders (sales and purchase orders) and the related data (e.g. logistics) in real time. Tax Authority can also use risk-profiling software to identify suspicious transactions as soon as Taxable Person has granted access to his system. Tax Authority can use these risk indicators to immediately initiate further investigations and site audits to stop fraudulent activities and secure the collection of VAT. A refund of the net VAT balance can be refused if Tax Authority access is denied or made difficult.	

3.1.3.3.3 Alternative 8 – Transaction and VAT payment monitoring at the level of the automated clearing house (enriched data)

Description

114. Under this alternative, automated clearing houses send the tax authority information on payments made and received by taxable persons. This payment information is enriched in order to allow for more comprehensive monitoring.

115. No changes would be performed to the VAT collection model.

116. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

High-level diagram[20]

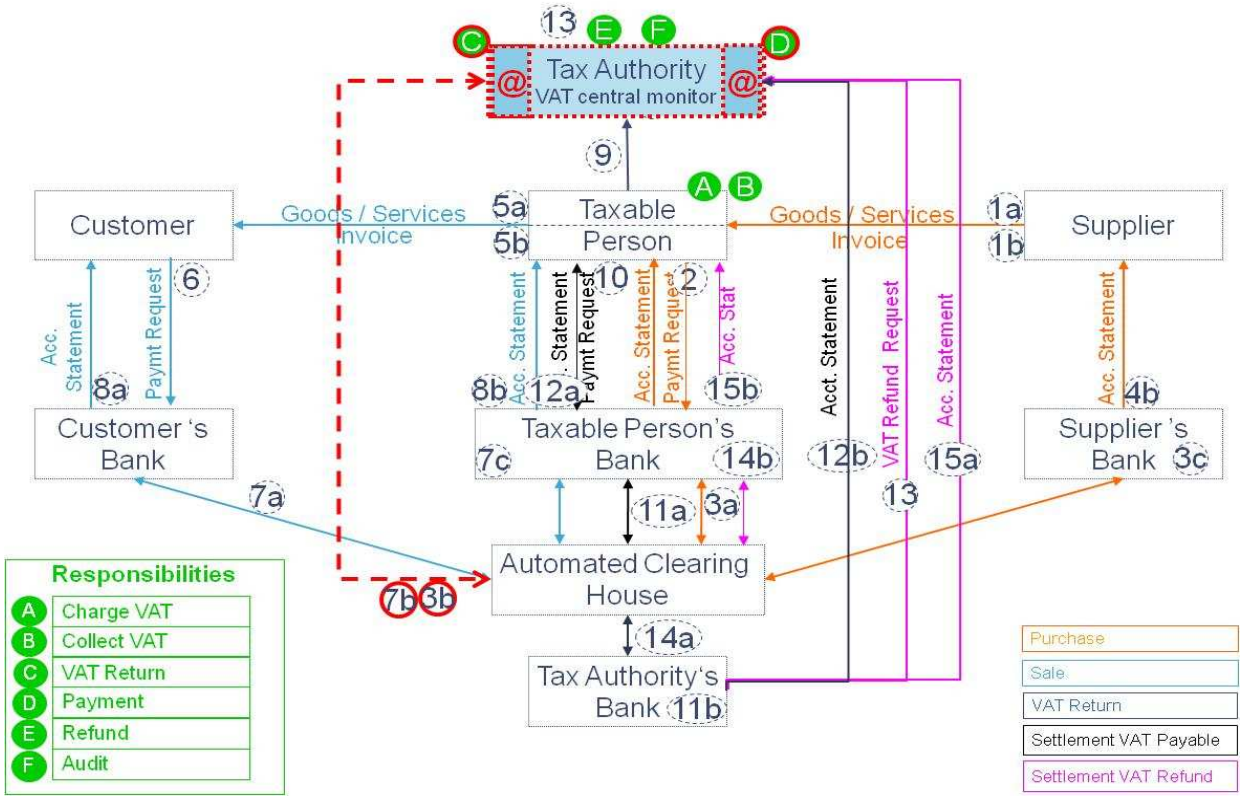


Figure 9 – Alternative 8 – Transaction and VAT payment monitoring at the level of the Automated Clearing House (enriched data)

Process description[21]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Automated Clearing House provides payment information (at least taxable amount and VAT amount) to Tax Authority.
Step 3c	Supplier's bank account is credited with the taxable amount and the VAT

[20] Changes compared to the Current VAT Model are circled in red.
[21] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Automated Clearing House provides payment information (at least taxable amount and VAT amount) to Tax Authority.
Step 7c	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.

Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Under this alternative, Tax Authority is able to monitor transaction and VAT payment flows in real time. Tax Authority can also use risk-profiling software to identify suspicious transactions as soon as transaction and VAT payment flows are made available. Tax Authority can use these risk indicators to immediately initiate further investigations and site audits to stop fraudulent activities and secure the collection of VAT. A refund of the net VAT balance could be refused if no transaction and VAT payment flows are being sent to Tax Authority.	

3.1.3.3.4 Alternative 9 – Transaction and VAT payment monitoring at the level of the bank (enriched data)

Description

117. Under this alternative, banks send the tax authority information on payments made and payments received by taxable persons. This payment information is enriched in order to allow more comprehensive monitoring.

118. No changes are made to the VAT collection model.

119. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

***High-level diagram*[22]**

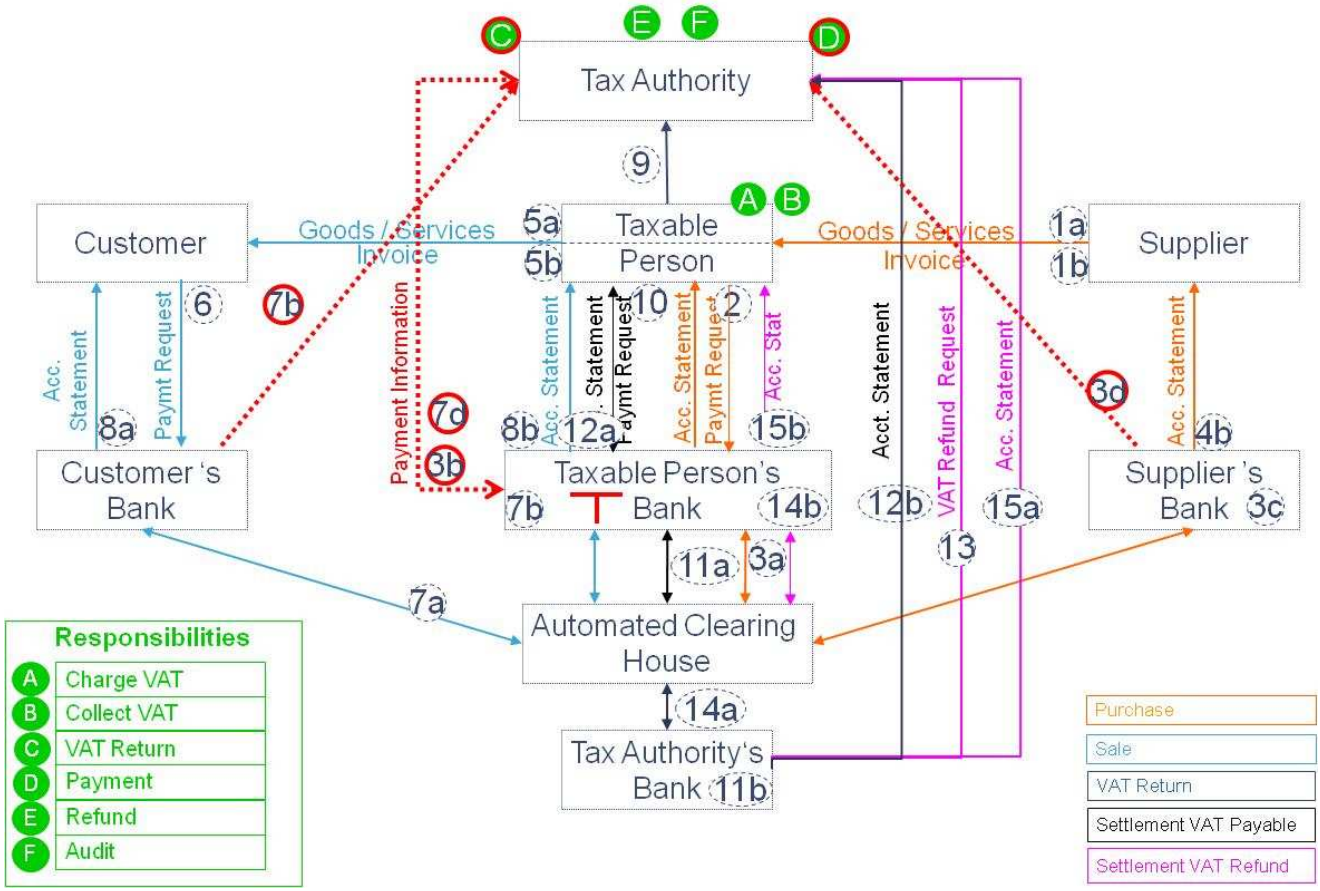


Figure 10 – Alternative 9 – Transaction and VAT payment monitoring at the level of the bank (enriched data)

***Process description*[23]**

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Taxable Person's Bank provides payment information (at least taxable

[22] Changes compared to the Current VAT Model are circled in red.
[23] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	amount and VAT amount) to Tax Authority.
Step 3c	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 3d	Supplier's Bank provides payment information (at least taxable amount and VAT amount) to Tax Authority.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Customer's Bank provides payment information (at least taxable amount and VAT amount) to Tax Authority.
Step 7c	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 7d	Taxable Person's Bank provides payment information (at least taxable amount and VAT amount) to Tax Authority.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.

Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Under this alternative, Tax Authority is able to monitor transaction and VAT payment flows in real time. Tax Authority can also use risk-profiling software to identify suspicious transactions as soon as transaction and VAT payment flows are made available. Tax Authority can use these risk indicators to immediately initiate further investigations and site audits to stop fraudulent activities and secure the collection of VAT. A refund of the net VAT balance can be refused if no transaction and VAT payment flows are being sent to Tax Authority. Tax Authority can perform an audit on the correctness of the payment and deduction of VAT after the transactions have taken place (*ex post*) and once the transactions have been reported (in VAT returns and/or other listings).	

3.1.3.3.5 Alternative 10 – Credit card VAT payment monitoring

Description

120. Under this alternative, the automated clearing house sends the tax authority information on credit card payments made to taxable persons. This payment information is enriched in order to allow for more comprehensive monitoring.

121. No changes are made to the VAT collection model.

122. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

123. This alternative is applicable to payments made by non-taxable persons (B2C) and by taxable persons using corporate credit cards (B2B, i.e. procurement cards).

124. Reference is made to Turkey, where a similar model exists.

High-level diagram[24]

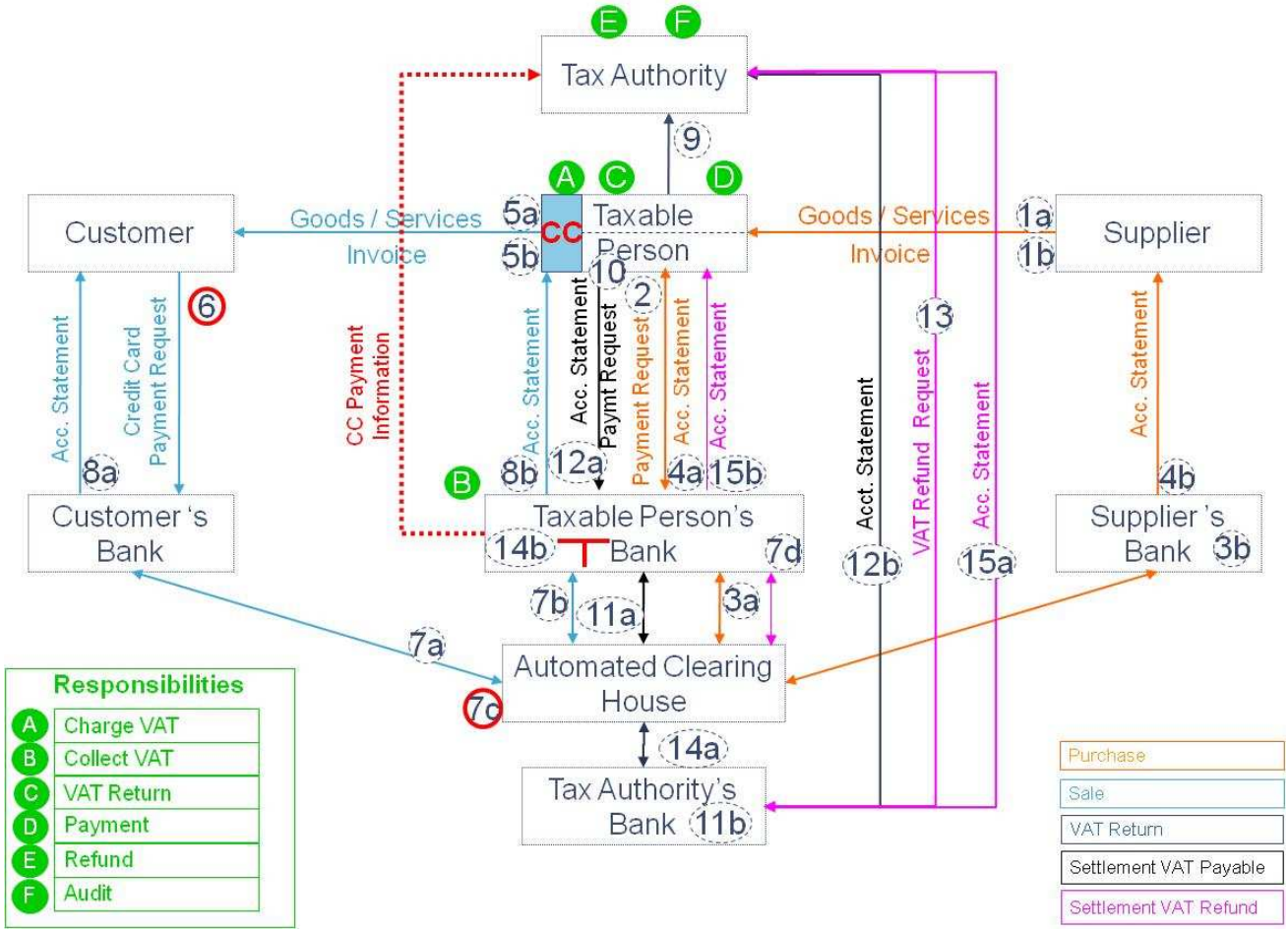


Figure 11 – Alternative 10 – Credit card VAT payment monitoring

Process description[25]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the

[24] Changes compared to the Current VAT Model are circled in red.
[25] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a credit card payment for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Credit Card Company provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited for the taxable amount and the VAT amount.
Step 7c	Automated Clearing House provides information on the payment received to Tax Authority.
Step 7d	Credit Card Company requests payment from Customer's Bank via direct debit.
Step 7e	Customer's Bank debits Customer's bank account for the total amount to be paid (taxable amount and VAT amount).
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.

Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Under this alternative, Tax Authority is able to monitor payment flows of credit card payments in real time. Tax Authority can also use risk-profiling software to identify suspicious transactions as soon as credit card payments are made. Tax Authority can use these risk indicators to immediately initiate further investigations and site audits to stop fraudulent activities and secure the collection of VAT. A refund of the net VAT balance could be refused if no credit card payments are being sent to Tax Authority. Tax Authority can perform an audit on the correctness of the payment and deduction of VAT after the transactions have taken place (*ex post*) and after the transactions have been reported (in VAT returns and/or other listings).	

3.1.3.3.6 Alternative 11 – Standard Audit File for Tax

Description

125. Under this alternative, transaction data is sent or made available to the tax authority on a periodic basis in a predetermined format. Data and format harmonisation allows of easier data-mining by Tax Authority.

126. No changes are made to the VAT collection model.

127. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

128. The Standard Audit File for Tax (SAF-T) has been implemented by a number of countries. The use, format and data elements have been defined in OECD Guidance.[26]

129. Reference is made to Portugal[27], the UK[28], the Netherlands[29] and to Singapore.[30]

[26] OECD, Guidance for the Standard Audit File – Tax, April 2010, http://www.oecd.org/dataoecd/42/35/45045602.pdf

[27] http://www.saftpt.com

[28] http://www.hmrc.gov.uk

[29] http://www.belastingdienst.nl

[30] http://www.iras.gov.sg/irasHome/page.aspx?id=9146

High-level diagram[31]

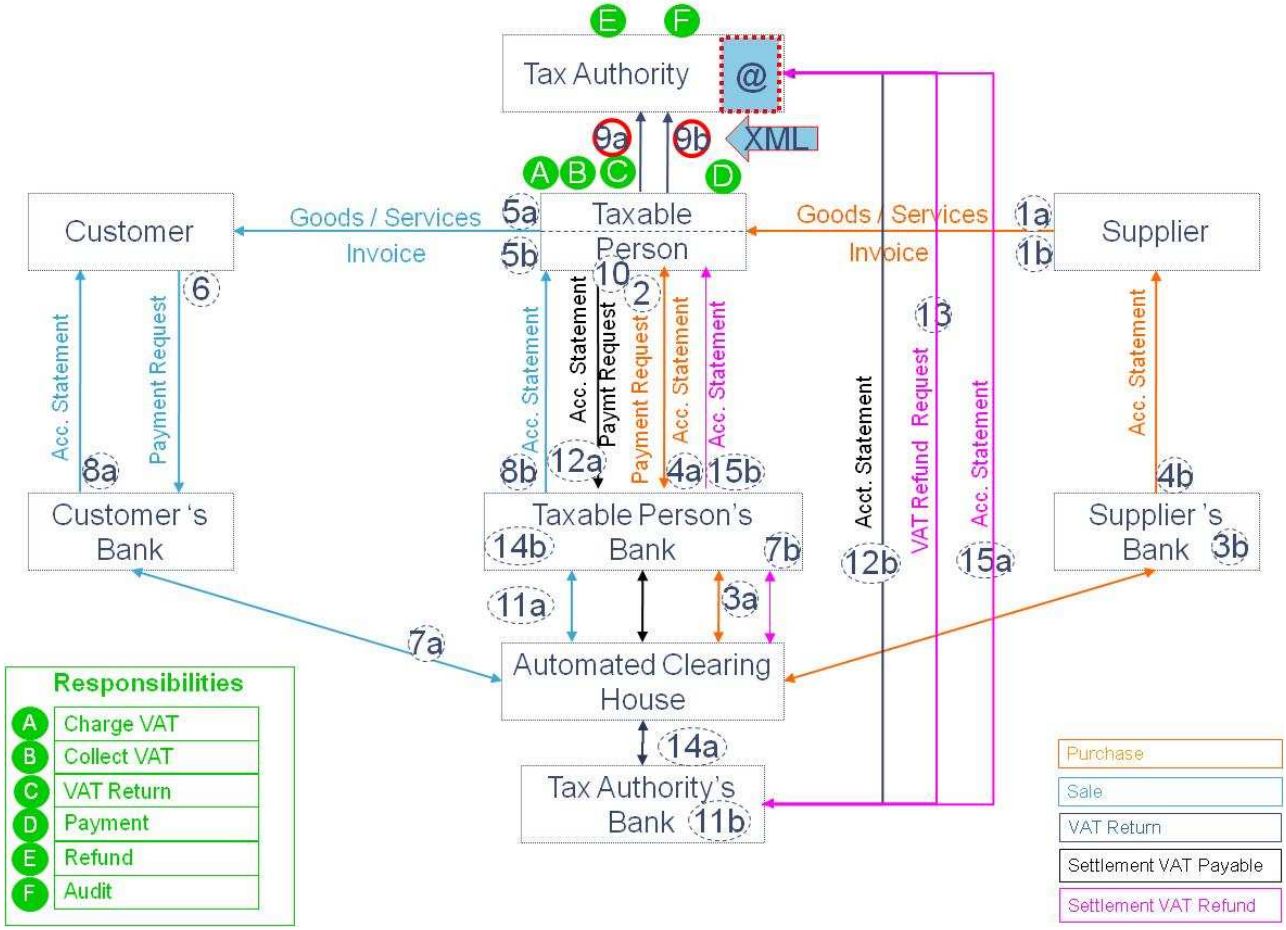


Figure 12 – Alternative 11 – Standard audit file for tax

Process description[32]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable

[31] Changes compared to the Current VAT Model are circled in red.
[32] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9a	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and he files this VAT return with Tax Authority.
Step 9b	Taxable Person sends or makes available transaction data for the taxable period in a predetermined format.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.

Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.

F) Auditing

Tax Authority can perform an audit on the correctness of the payment and deduction of the VAT only after the transactions have taken place ("*ex post*") and after the transactions have been reported (in VAT returns and/or other listings).

Tax Authority can verify all transaction data remotely and at the time of the VAT return (with aggregate data) and additional information (with transaction data).

3.1.3.4 Alternatives that increase compliance through certification of service providers, software or taxable persons

3.1.3.4.1 Alternative 12 – Certified VAT service provider

Description

130. Under this alternative, a certified VAT service provider is responsible for all VAT compliance of a taxable person. This includes issuing invoices and charging VAT to customers, receiving invoices from suppliers and preparing and submitting VAT returns.

131. The taxable person is still responsible to provide relevant transaction data to the certified VAT service provider. However, the certified VAT service provider should ensure that the correct VAT treatment is applied. Furthermore, in order to be certified by the tax authority or another qualifying certification body, the service provider should adhere to client acceptance rules before engaging with a specific client.

132. No changes are made to the VAT collection model.

133. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

134. Reference is made to the US Streamlined Sales Tax Model & Tax Representative[33], which is a similar model.

[33] http://www.streamlinedsalestax.org/

High-level diagram[34]

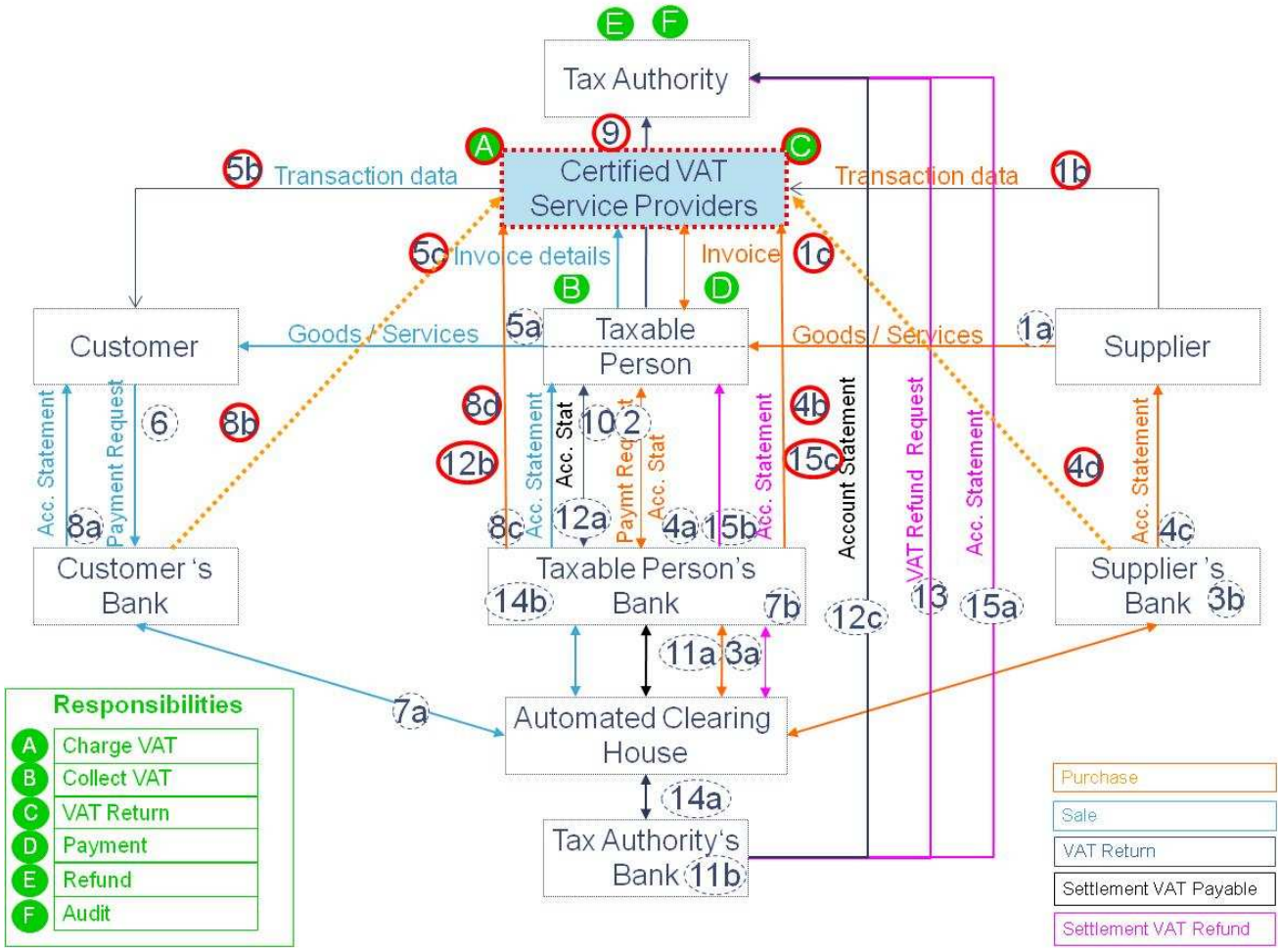


Figure 13 – Alternative 12 – Certified VAT service provider

Process description[35]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier provides transaction data to Supplier's Certified VAT Service Provider.
Step 1c	Supplier's Certified VAT Service Provider determines the VAT treatment and issues an invoice to Taxable Person, stating the taxable amount and the VAT amount. The invoice is sent to Taxable

[34] Changes compared to the Current VAT Model are circled in red.
[35] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	Person and to Taxable Person's Certified VAT Service Provider
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Taxable Person's Bank makes an account statement available to Taxable Person's Certified VAT Service Provider to inform him of the transfer of the money.
Step 4c	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
Step 4d	Supplier's Bank makes an account statement available to Supplier's Certified VAT Service Provider to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person provides transaction data to Taxable Person's Certified VAT Service Provider.
Step 5c	Taxable Person's Certified VAT Service Provider determines the VAT treatment and issues an invoice to Customer, stating the taxable amount and the VAT amount. The invoice is sent to Customer and to Customer's Certified VAT Service Provider.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Customer's Bank makes an account statement available to Customer's Certified VAT Service Provider to inform him of the transfer of the money.
Step 8c	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8d	Taxable Person's Bank makes an account statement available to Taxable Person's Certified VAT Service Provider to inform him of receipt of the payment.

C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person's Certified VAT Service Provider has to prepare a VAT return in which he states the net VAT balance, and files this return with Tax Authority and sends it to Taxable Person.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Taxable Person's Bank makes an account statement available to Taxable Person's Certified VAT Service Provider to inform him of the transfer of the money.
Step 12c	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
Step 15c	Taxable Person's Bank makes an account statement available to Taxable Person's Certified VAT Service Provider to inform him of receipt of the refund.
F) Auditing	
Tax Authority can audit a Taxable Person's VAT compliance in the hands of Taxable Person's Certified VAT Service Provider as he has both transaction data of the Taxable Person and the VAT reporting. Tax Authority can perform an audit on the correctness of the payment and deduction of the VAT only after the transactions have taken place ("*ex post*") and after the transactions have been reported (in VAT returns and/or other listings).	

3.1.3.4.2 Alternative 13 – Certified VAT software system

Description

135. Under this alternative, a taxable person uses certified VAT software that assures VAT compliance (e.g. automated tax determination, purchase and sales invoice validation, and invoice production) and easy access for the tax authority to the system for auditing purposes, facilitating the use of data-mining techniques (cf. section 3.1.3.3).

136. No changes are made to the VAT collection model.

137. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

138. Preference is given to guidance from the OECD,[36] which provides a set of standards for software to ensure that tax audit processes can be carried out with greater reliability (i.e. electronic export facilities, three way matching).

139. Reference is made to Armenia, where a similar model has existed since 1 July 2010, to cash registers introduced in the Belgian restaurant business since 2010, to the US Streamlined Sales Tax Model & Tax Representative[37], to Singapore[38] where taxable persons can apply for grants when buying the necessary software and to Tanzania[39] where from 1 July 2010 the former electronic cash registers (ECRs) which were used to record sales and issue receipts by retailers are replaced by Electronic Fiscal Devices. The system requires all VAT registered traders to use electronic fiscal devices to issue invoices and receipts for the supplies made.

[36] OECD, Guidance on Tax Compliance for Business and Accounting Software, May 2005. http://www.oecd.org/dataoecd/13/45/34910263.pdf
[37] http://www.streamlinedsalestax.org/
[38] http://www.iras.gov.sg/irasHome/page.aspx?id=9146
[39] PwC Finance Bill Update 2010, http://www.pwc.com/en_TZ/tz/pdf/finance-bill-update-2010.pdf

***High-level diagram*[40]**

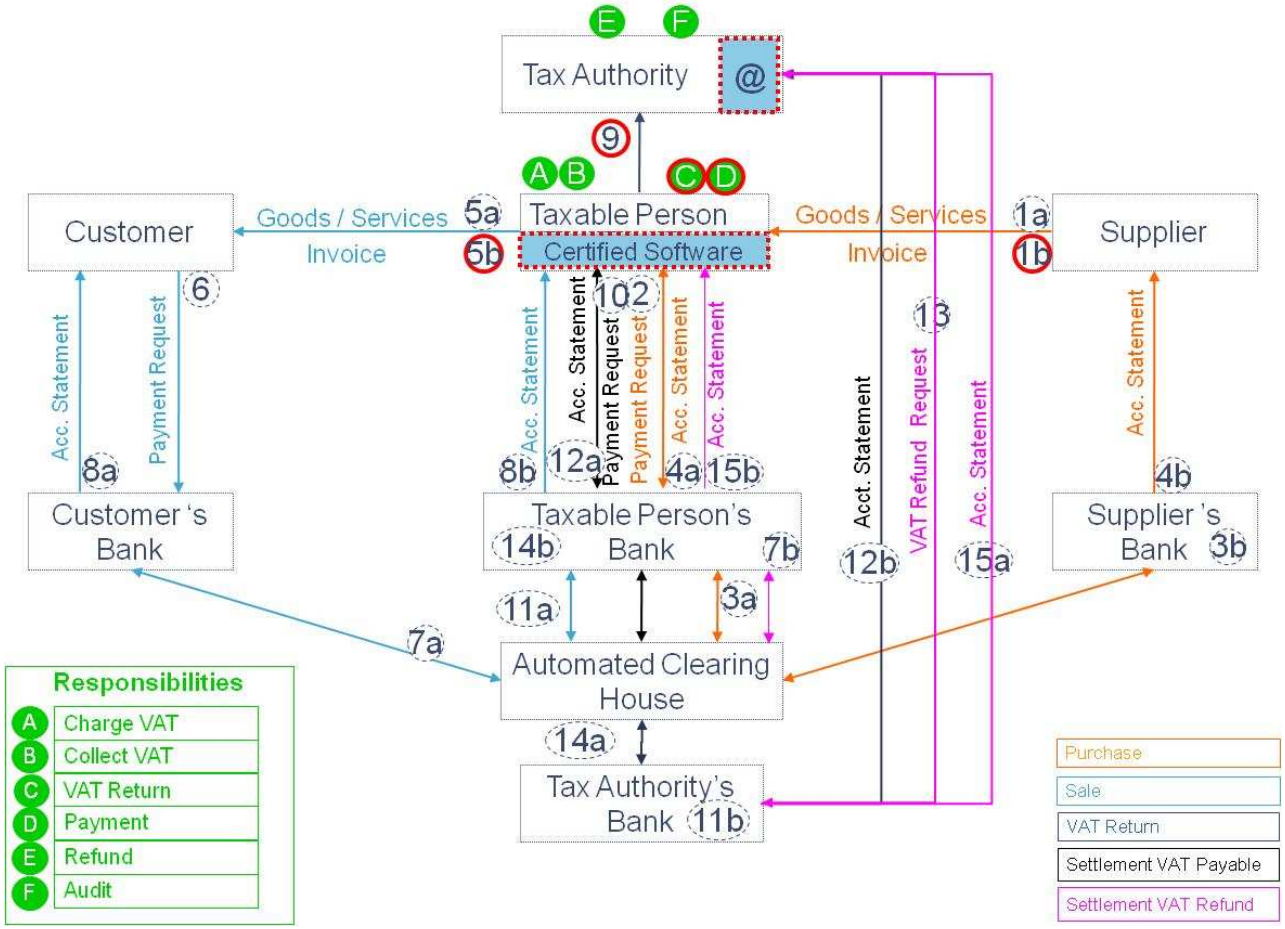


Figure 14 – Alternative 13 – Certified VAT software system

***Process description*[41]**

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person using Certified VAT Software, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.

[40] Changes compared to the Current VAT Model are circled in red.
[41] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer using Certified VAT Software, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and files this return with Tax Authority. This VAT return is prepared using the Certified VAT Software.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.

Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Tax Authority can focus its audit on risk-detection and the substantive testing of transaction data and its quality, rather than on the correctness of VAT compliance from a formal point of view (including charging and deduction of VAT), which is done by Certified VAT Software. Tax Authority can perform an audit on the correctness of the payment and deduction of the VAT only after the transactions have taken place ("*ex post*") and after the transactions have been reported (in VAT returns and/or other listings).	

3.1.3.4.3 Alternative 14 – Certified taxable person

Description

140. Under this alternative, a taxable person's VAT compliance process and internal controls are certified. In order to be certified, the taxable person should have an *"Internal control framework"* (ICF),[42] which should include a *"VAT control framework"* covering people, processes and technology (systems).

141. Due to regulatory requirements[43] and the demands of shareholders, modern businesses need to have an ICF in place. Additionally, in a number of countries, there are corporate governance codes and laws that emphasise internal control, requiring businesses to continuously monitor their risks. These frameworks enable businesses to ensure that their operating, financial and compliance objectives are met and that they provide for the proper management of risk.

142. Where an ICF is in place, the taxable person will undertake a *"self-risk assessment"* of all its control and monitor functions and will be in a position to provide a statement, known as an *"in control statement"*, in relation to those functions. With an *"in control statement"*, a management board affirms that it is in control of the processes taking place in its business.

143. If a taxable person is *"in control"* he should be in a position to detect, document and report any relevant tax risks to the tax authority, provided that specific tax requirements are incorporated into the ICF. These specific tax requirements are sometimes described as a *"Tax Control Framework"* (TCF), which focuses on the internal control of tax processes. The ability to provide an audit trail between invoices, supplies, deliveries and payments is a key element of a TCF. Another key element is the reliability of the software accounting system and processes used for handling both the sale and purchase process for VAT purposes and the VAT compliance (invoices, VAT returns and listings).

144. The taxable person should provide the tax authority with a description of the main tax risks related to the company and of the design and effectiveness of the internal risk management and control systems for the main tax risks during the relevant financial year.

145. If the taxable person is in a position to detect and report any meaningful risks to the tax authority, the role of the tax authority can change to that of assessing the monitoring system of the taxable person itself, rather than intrusive auditing.

[42] Committee of Sponsoring Organisations of the Treadway Commission (COSO), Guidance on Monitoring Internal Control Systems, www.coso.org, 2009.
[43] For example, the United States Sarbanes-Oxley Act of 2002 imposes requirements for the establishment of internal controls by public companies.

146. Certification is only provided if the taxable person is *"in control"* and where the tax authority can audit efficiently and effectively. Certification could be performed either by the tax authority or by third parties such as the financial auditor of a company in accordance with specific certification standards. Certification could also be pushed to taxable persons that deliver an *"in control statement"*.

147. The Netherlands has put in place "*horizontal monitoring*" whereby the tax control framework of taxable persons is audited by the tax authority. The scope of the certification can include all taxes (corporate income taxes, payroll taxes, VAT, customs and excise duties and any other state tax (e.g. packaging tax)). Where a positive audit opinion is issued by the tax authority, confirming that the internal processes and controls guarantee complete, correct, timely tax returns, the tax authority will themselves no longer perform in-depth audits but only limited audits or even, further, *"covenants"* could be accepted from the taxable person.[44]

148. Within the OECD,[45] work has been performed by the informal joint working group on TAX Electronic Auditing, reflected in the information note on Tax Compliance and Tax Accounting Systems. It describes how tax control frameworks including systems and accounting software and the use of standard audit files for tax can enable monitoring by tax authorities and targeted auditing to improve the efficiency and effectiveness of collection and enforcement.

149. No changes are made to the VAT collection model.

150. Taxable persons are still responsible for charging the correct amount of VAT on their invoices. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

151. Reference is also made to the Netherlands[46] and South Korea[47] and Singapore[48], where similar models exist.

[44] http://download.belastingdienst.nl/belastingdienst/docs/business_plan_2008_%202012_bjv0031z81fdeng.pdf.
[45] OECD, Forum on Tax Administration's General Administrative Principles: Information Note on Tax Compliance and Tax Accounting Systems, 2010, http://www.oecd.org/dataoecd/42/37/45045662.pdf.

[46] http://www.belastingdienst.nl

[47] http://www.nts.go.kr/eng
[48] http://www.iras.gov.sg/irasHome/page.aspx?id=9146

High-level diagram[49]

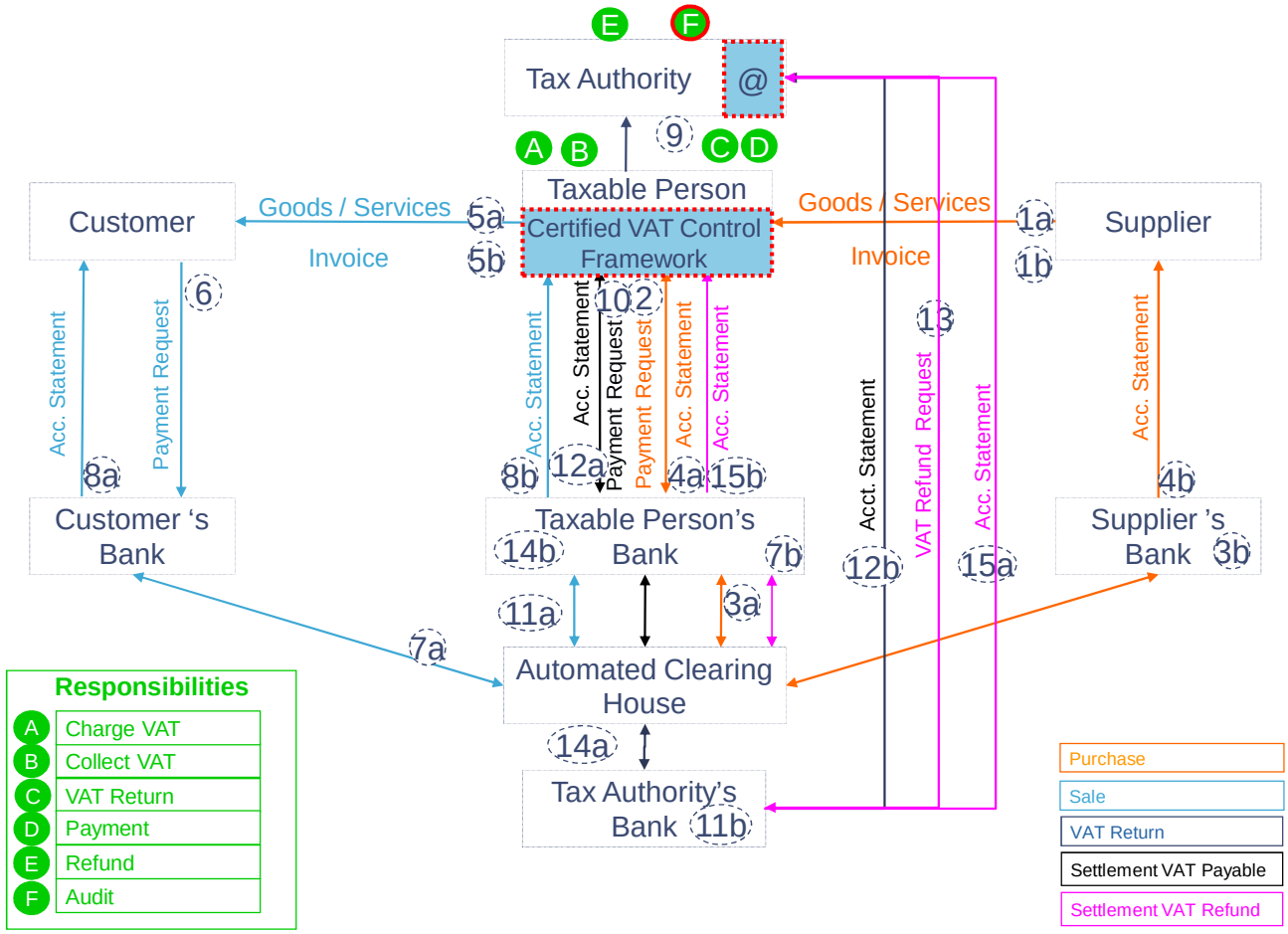


Figure 15 – Alternative 14 – Certified taxable person

Process description[50]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme *"Taxable Person"* purchases goods or services from *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person using Certified VAT Software, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.

[49] Changes compared to the Current VAT Model are circled in red.
[50] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer using Certified VAT Software, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return in which he states the net VAT balance, and files this return with Tax Authority. This VAT return is prepared in accordance with the Certified VAT Control Framework, including the processes and systems used.
Settlement of the VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.

Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.

F) Auditing

Tax Authority can audit more efficiently and effectively, taking into account the Certified VAT Control Framework that Taxable Person has in place. It also allows Tax Authority to easily match certain data (e.g. invoice data, delivery data and payment data). Such audit trails are part of the Certified VAT Control Framework.

Tax Authority can perform an audit on the correctness of the payment and deduction of the VAT only after the transactions have taken place ("*ex post*") and after the transactions have been reported (in VAT returns and/or other listings).

3.2 High-level preliminary qualitative impact assessment

3.2.1 Introduction

152. In order to select which of the 14 alternatives as described in the previous section should be studied in more detail, a high-level preliminary qualitative impact assessment has been performed.

3.2.2 Assessment methodology

153. Prior to performing the preliminary assessment, we developed an assessment methodology. This draft methodology was reviewed by the Commission Steering Group and consists of a layered approach to assessing the alternatives.

154. In a first layer, we use the OECD broad taxation principles as benchmarks to assess the alternatives. Only those alternatives that pass this initial test are assessed in the next layer.

155. In a second layer, we use criteria that are relevant from a tax authority's perspective and from a taxable person's perspective. The description and importance of these criteria have been discussed with and reviewed by the Commission Steering Group.

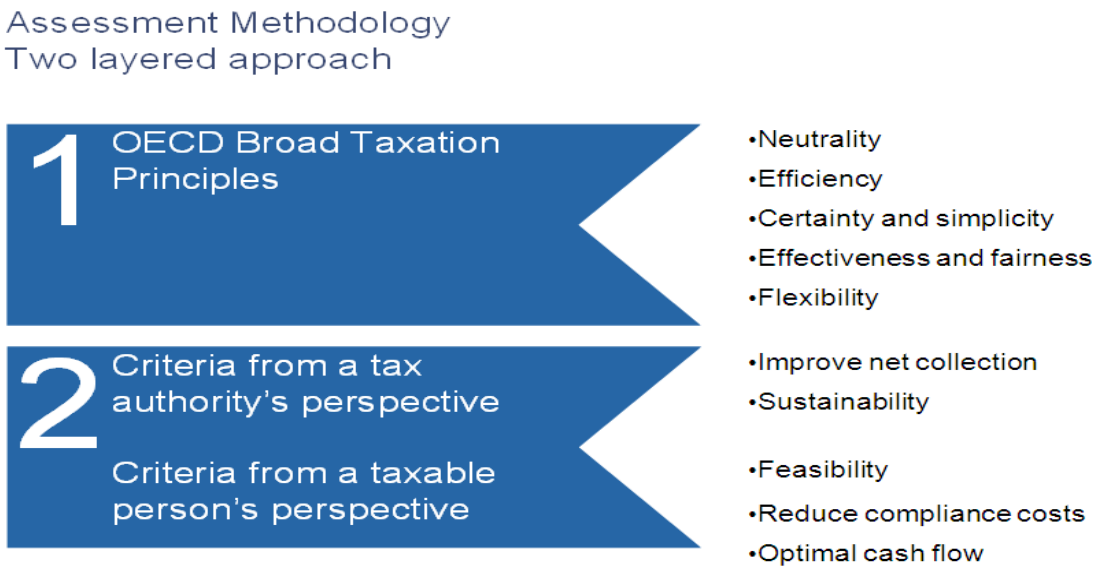


Figure 16 – Assessment Methodology

156. Annex 1 contains a detailed description of the criteria.

157. It should be noted that this preliminary assessment is purely qualitative and based on brainstorming by the Multidisciplinary Dedicated Core Team and the Global Multidisciplinary Expert Panel. Furthermore, for some alternatives, it is already clear that the assessment depends heavily on their specific features (e.g. what information needs to be provided, whether existing systems will be used or whether new systems should be created). Consequently, this preliminary assessment only gives a high-level indication of the impact that an alternative may have on the tax authority and the taxable person.

3.2.3 Assessment against the OECD broad taxation principles

158. In the following table, the various alternatives are assessed qualitatively against the OECD broad taxation principles. Where needed, we provide a reason for our assessment. It should be noted that the OECD broad taxation principles apply to how a tax is designed and not particularly to how a tax is collected. Consequently, some principles may be of less relevance when assessing alternatives for the collection of VAT (e.g. the principle of neutrality). Other principles, however, are extremely relevant (e.g. the principle of efficiency).

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
0. Current VAT model						Not assessed
1. Automated split payment – Blocked VAT bank account at the level of the Automated Clearing House	x	x	x	x	x	
2. Automated split payment – Blocked VAT bank account at the level of the taxable person's bank	x	-	x	-	x	▪ There are too many actors (more than 5.000 banks) to allow tax authorities to monitor effectively and to keep compliance costs for taxable persons at a reasonable level. ▪ Tax evasion or avoidance at the level of the banks cannot be ruled out, especially as banks established outside the EU could also be VAT collectors.
3. Automated split payment – Blocked VAT bank account at the level of the tax authority's	x	x	x	x	x	

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
bank						
4. Manual split payment	x	x	x	x	x	▪ Depending on the features of this alternative, the compliance costs for taxable persons may be significant. However, this alternative requires few modifications to the current model. Assessment of the principle of efficiency needs to be further studied.
5. Automated split payment in the case of credit card payments	-	-	x	-	x	▪ Taxable persons who receive a credit card payment cannot use the input VAT on the blocked VAT bank account to purchase goods. ▪ There are too many actors (more than 5.000 banks) to allow tax authorities to monitor effectively and to keep compliance costs for taxable persons at a reasonable level. ▪ Tax evasion or avoidance at the level of the banks cannot be ruled out, especially as banks established outside the EU could also be VAT collectors.

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
6. Central VAT monitoring database	x	x	x	x	x	▪ Depending on the features of this alternative, compliance costs may be high or limited. Therefore, in this preliminary assessment it is not possible to analyse whether it meets the principle of efficiency. ▪ In addition the current volume of invoices in the EU has been estimated at 29 billion on an annual basis.[51] Each invoice contains multiple data. The communication costs and costs of running the secure central VAT monitoring data warehouses is substantial for the tax authority. All taxable persons, whether compliant or not, also incur additional costs on top of their current archiving and compliance obligations in setting up processes and communicating with the tax authority.

[51] Billentis report, "E-invoicing / e-billing in Europe, taking the next step towards automated and optimised processes", February 2009. http://www.billentis.com/Publikationen_e.htm
The author of the Billentis report stated in a telephone conversation that "all European countries except Russia are included in the figures. Reduced to EU-27, the invoice volume is 29 billion" (Bruno Koch, 2010).

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
						▪ Furthermore, the set of data collected (only invoice data), may not provide a sufficient audit trail allowing a tax authority to match this invoice data with other relevant data (e.g. delivery data, payment data) in order to effectively and efficiently perform an audit. ▪ Taking into account the potential high compliance cost and the fact that this alternative only offers limited possibility to achieve the objective of increasing the net collection of VAT, in and of itself, it may or may not meet the principle of efficiency.
7. Central VAT monitoring through direct access by the tax authority to the taxable person's system	x	x	x	x	x	▪ Depending on the features of this alternative (what level of information is required, whether existing systems are used), both the compliance costs and the administrative costs may be high. However, the tax authorities are provided with more data to identify fraudulent transactions

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
						(compared to alternative 6). On a stand-alone basis, this alternative may meet the principle of efficiency, depending on how it is implemented.
8. Transaction and VAT payment monitoring at the level of the automated clearing house (enriched data)	x	-	x	x	x	▪ Depending on the features of this alternative, both compliance costs and administrative costs may be very high compared to its benefits, as only payment data is monitored. On a stand-alone basis, this alternative does not seem to meet the principle of efficiency.
9. Transaction and VAT payment monitoring at the level of the bank (enriched data)	x	-	x	x	-	▪ There are too many actors (more than 5.000 banks) to allow tax authorities to monitor effectively and to keep compliance costs for taxable persons at a reasonable level. ▪ Tax evasion or avoidance at the level of the banks cannot be ruled out, especially as banks established outside the EU could also be VAT collectors.

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
10. Credit card VAT payment monitoring	x	x	x	x	x	▪ Depending on the scope and features of this alternative, both compliance costs and administrative costs may be high compared to its benefits. As we are not sure whether this alternative meets the principle of efficiency, we do not rule it out in this preliminary assessment
11. Standard audit file for tax	x	x	x	x	x	
12. Certified VAT service provider	x	-	x	x	x	▪ As an additional actor needs to be included in the collection model, there is a significant risk that the compliance costs and/or administrative costs (if the tax authorities in-source the certified VAT service provider) are very high compared to its benefits.
13. Certified VAT software system	x	x	x	x	x	▪ Depending on the features of this alternative, compliance costs may be high or limited. Therefore, in this preliminary assessment it is not possible to analyse whether it meets the principle of efficiency.
14. Certified taxable person	x	x	x	x	x	▪ Compliance costs may be

Alternatives	*Neutrality*	*Efficiency*	*Certainty and simplicity*	*Effectiveness and fairness*	*Flexibility*	*Notes*
						limited if, for this alternative, certification is based on *"business controls"*, the existing standards for internal control frameworks and the VAT control framework. If the features of this alternative, including the method of certification are very specific (as to the processes needing to be implemented in order for a taxable person to be certified), compliance costs may be high or limited. Therefore, in this preliminary assessment, it is not possible to analyse whether this alternative meets the principle of efficiency.

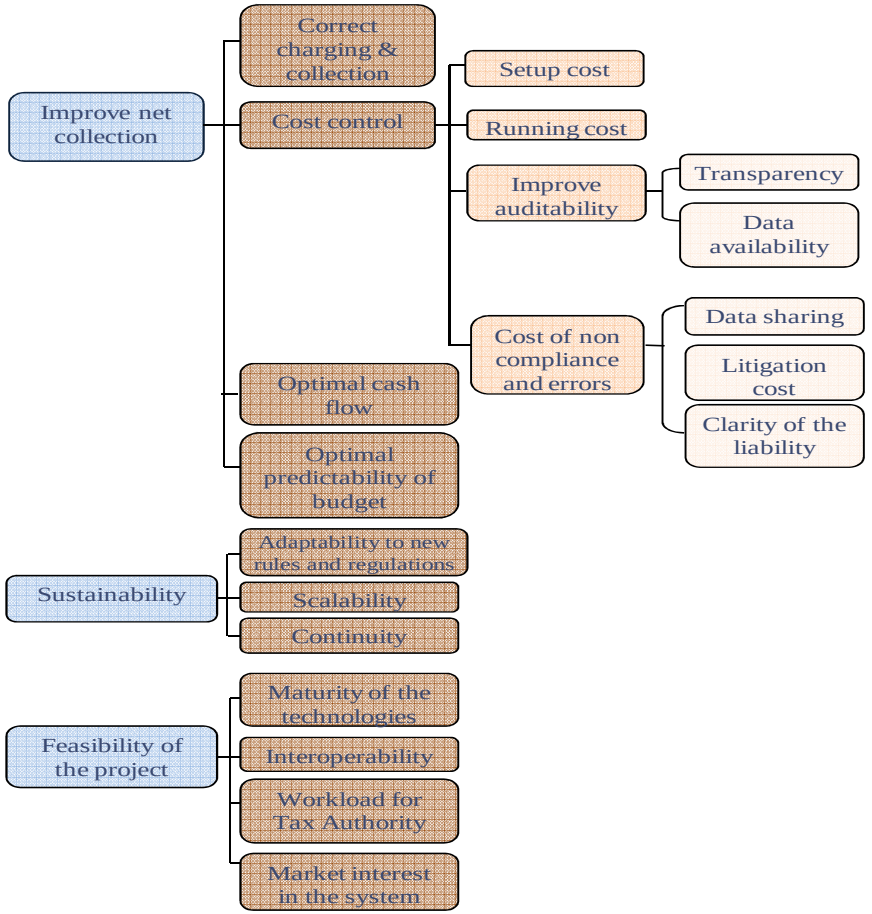
Table 1 – Assessment of the alternatives against the OECD broad taxation principles

159. After assessing all alternatives against the OECD broad taxation principles, in our view, alternatives 2, 5, 8, 9 and 12 do not meet the principle of efficiency. Alternatives 2 and 9 may also not meet the principle of effectiveness and fairness. Based on the assessment methodology described above, we have not further assessed these 5 alternatives. For the other 9 alternatives, we have performed a preliminary assessment from the tax authority's and taxable person's perspectives.

3.2.4 Assessment against the criteria from the tax authority's and the taxable person's perspectives

160. In the following table, the 9 alternatives are assessed qualitatively against the criteria from the tax authority's perspective and criteria from the taxable person's perspective. Figure 17 on the following page depicts the main criteria. Annex 1 provides a more detailed description of the criteria and also explains the importance of each criterion.

Criteria from a tax authority's perspective



Criteria from a taxable person's perspective

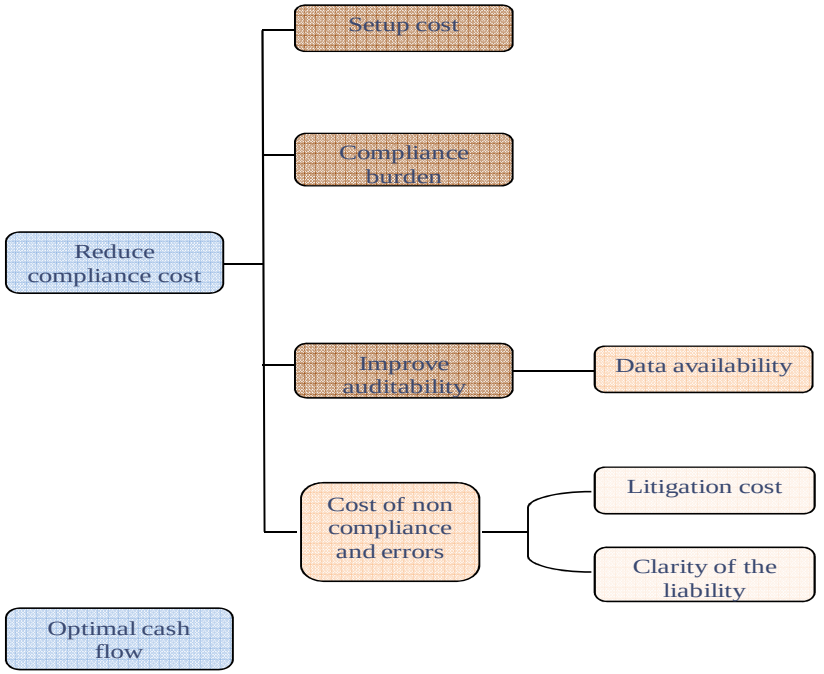


Figure 17 – Criteria from a tax authority's and taxable person's perspectives

Alternatives	*Tax authority's perspective*	*Taxable person's perspective*
0. Current VAT model	Not assessed	Not assessed
1. Automated split payment – Blocked VAT bank account at the level of the Automated Clearing House	▪ There may be issues with interoperability and the maturity of the technology. Furthermore, the set-up cost of this alternative may be significant, especially as this alternative requires enriched data. ▪ The objective of correct charging and collection is achieved to a high degree. This alternative seems to effectively tackle the issue of VAT refunds where no VAT has ever been paid or of missing traders who do not pay VAT they have received on to the tax authority. However, other fraudulent behaviour may continue to exist (to be further studied).	▪ The main issue from a taxable person's perspective is the set-up cost to make sure that payment requests contain all required enriched data. ▪ Furthermore, additional (indirect) compliance costs may be incurred depending on the requirements of the systems that automated clearing houses need to implement, as automated clearing houses will recharge these costs (indirectly) to their customers.
3. Automated split payment – Blocked VAT bank account at the level of the tax authority's bank	▪ There may be issues with interoperability and the maturity of the technology. Furthermore, the set-up cost of this alternative may be significant, especially as this alternative requires enriched data. ▪ The objective of correct charging and collection is achieved to a high degree. This alternative seems to effectively tackle the issue of VAT refunds where no VAT has ever been paid or of missing traders who do not pay VAT they have received on to the tax authority. However, other fraudulent behaviour may continue to exist (to be further studied). ▪ This alternative may be more feasible than alternative 1 because no actor in the collection model is given a significantly different role (in alternative 1 the automated clearing house also becomes responsible for managing bank accounts).	▪ The main issue from a taxable person's perspective is the set-up cost to make sure that payment requests contain all required enriched data. ▪ Furthermore, additional (indirect) compliance costs may be incurred depending on the requirements of the systems that automated clearing houses need to implement, as automated clearing houses will recharge these costs (indirectly) to their customers.

Alternatives	*Tax authority's perspective*	*Taxable person's perspective*
	▪ Furthermore, the VAT collected is deposited in a blocked VAT bank account at the level of the tax authority's bank. In this respect, the risk of tax evasion and tax avoidance is reduced.	
4. Manual split payment	▪ This alternative is less radical than alternatives 1-3 and therefore the issues related to alternatives 1-3 will most likely be less of a concern. ▪ The objective of correct charging and collection is achieved to a high degree. This alternative seems to effectively tackle the issue of VAT refunds where no VAT has ever been paid or of missing traders who do not pay VAT they have received on to the tax authority. However, other fraudulent behaviour may continue to exist (to be further studied).	▪ The direct compliance cost for a taxable person will most likely be higher than under alternatives 1-3 as a taxable person will need to allocate additional resources or modify his systems to make the split payment.
6. Central VAT monitoring database	▪ Depending on the features of the alternative, the set-up costs (if significant system changes are required) or the workload of the tax authority may be significant. ▪ This alternative does not in and of itself achieve the objective of increasing the correct charging and collection of VAT. However, if this alternative means that tax authorities can monitor transactions faster and more efficiently and effectively, it may reduce the incidence of fraud. ▪	▪ Depending on the features of the alternative, the set-up cost for taxable persons may be high or low.

Alternatives	*Tax authority's perspective*	*Taxable person's perspective*
7. Central VAT monitoring through direct access by the tax authority to the taxable person's system	▪ Depending on the features of the alternative, the set-up costs (if significant system changes are required) or the workload of the tax authority will be significant (if few system changes are required). ▪ As the tax authorities have access to a variety of data (invoice date, purchase order, payment data), it should be possible through real-time monitoring capabilities to indirectly achieve the objective of correct charging and collection of VAT.	▪ Depending on the features of the alternative, the set-up cost for taxable persons may be high or low. ▪ Furthermore, issues may arise with, say, data privacy, confidential business information, which may make taxable persons reluctant to give access to their systems. ▪ Finally, if the tax authority uses this access to levy penalties on formal requirements or on the incorrect application of VAT without any loss of revenue, taxable persons may be reluctant to give access to their systems.
10. Credit card VAT payment monitoring	▪ This alternative does not in and of itself achieve the objective of increasing the correct charging and collection of VAT. However, if this alternative means that tax authorities can perform audits faster and more efficiently and effectively, it may reduce the incidence of fraud.	▪ The (indirect) compliance cost for taxable persons who receive credit card payments may be significant as the relevant stakeholders (credit card companies, banks, clearing houses) will want to recharge payment request-related costs.
11. Standard audit file for tax	▪ The administrative cost for the tax authority may be low. ▪ This alternative does not in and of itself achieve the objective of increasing the correct charging and collection of VAT. However, if effective data-mining processes are put in place and/or in combination with other alternatives, increased monitoring may, at a limited cost to the tax authorities, achieve the objective of increasing the correct charging and collection of VAT. ▪ Furthermore, common methodology for audit and	▪ Depending on the features of the alternative, the set-up costs and the running costs for taxable persons may be significant, particularly if no global harmonised standards are implemented.

Alternatives	*Tax authority's perspective*	*Taxable person's perspective*
	exchange of cross-border information could be achieved.	
13. Certified VAT software system	▪ The administrative cost for the tax authority may be low. ▪ Depending on the features of the alternative, it may achieve the objective of increasing the correct charging and collection of VAT. ▪ This alternative does not in and of itself achieve the objective of increasing the correct charging and collection of VAT. However, if effective data-mining processes are put in place and/or in combination with other alternatives, increased monitoring may, at a limited cost for the tax authorities, achieve the objective of increasing the correct charging and collection of VAT.	▪ Depending on the features of the alternative, the set-up cost, and, to a lesser extent, the running costs for taxable persons may be significant, particularly if the requirements regarding certified VAT software are not globally harmonised.
14. Certified taxable person	▪ The administrative cost for the tax authority may be low. ▪ If effective VAT control processes are put in place (i.e. VAT control framework), this alternative may achieve the objective of increasing the correct charging and collection of VAT at a limited cost to the tax authorities.	▪ Depending on the features of the alternative, the set-up cost, and the running costs, for taxable persons may be significant. Particularly if the VAT control framework required is in line with existing standards regarding the internal control framework (*"business controls"*) and is harmonised in the EU, costs should be low. Costs may be significant if the VAT control framework is not aligned, is not harmonised in the EU and if the requirements regarding certification of the processes are not globally harmonised.

Table 2 – Assessment of the alternatives against the criteria from the tax authority's and the taxable person's perspective

161. The preliminary assessment clearly shows that most alternatives that are advantageous from the taxable person's perspective are less advantageous from the tax authority's perspective and *vice versa*.

4 Overview of alternatives selected for further analysis

162. Further to our preliminary high-level impact assessment (see section 3.2) the Commission Steering Group has selected the following four alternatives for further analysis:

- alternatives 3 and 4 combined: Automated or manual split payment – Blocked VAT bank account at the level of the tax authority's bank (the split payment model);
- alternative 6 – Central VAT monitoring database (the central VAT monitoring database model);
- modified alternative 7 – Central VAT monitoring through direct access by the tax authority to the VAT data warehouse of the taxable person (the data warehouse model);
- alternative 14 – Certified taxable person (the certified taxable person model).

163. These alternatives, referred to as *"models"*, are described and analysed in further detail in the next chapters.

5 Quantitative and qualitative assessment

164. The main objective of this part of the Study is to make a high-level quantitative assessment[52] of all the incremental costs and benefits of the four models, regardless of which stakeholders will eventually bear the burdens or enjoy the benefits. The secondary objective is to identify areas where more information (e.g. by consulting the market) is needed to test the feasibility of each of the models.

5.1 Scope of the assessment

165. The scope of the quantitative assessment in this Study is the European Union consisting of 27 Member States, referred to as the EU-27.

166. All costs reported for the models are incremental costs, meaning that they are occasioned by the implementation of a new model and are not incurred by the current VAT model in place in the EU-27.

167. The quantitative assessment takes into account the necessary investments (one-off costs) and recurring, operational costs that will be incurred in order to run the model as described in previous sections of this Study.

168. The benefits under review are identified as potential reductions in the administrative burden (cost savings) and potential increased VAT revenues. Cost savings can be generated in different ways e.g. taxable persons may have to spend less time in preparing and filing VAT returns or may have quicker access to more-complete data on the VAT positions of a taxable person. VAT revenues increase when the VAT Gap is reduced due to implementation of a particular model.

5.2 Approach of the assessment

169. The methodology of this assessment is partially based on the Guidelines of the European Commission[53]. The approach to this assessment differs from the roadmap presented in the Guidelines because of the decision by the Commission Steering Group that no external stakeholders may be consulted in this stage. As the models differ in scope and set-up, different stakeholders are involved. Consequently, consultation would be premature. Nor is it possible to make an absolute ranking of the models as they are not mutually exclusive. This assessment clearly illustrates these issues and also clearly points out existing data quality issues. It establishes

[52] "An initial regulatory impact assessment (RIA) can consist of a rough and ready analysis based on what you already know. It should include your best estimates of the possible risks, benefits and costs, and will help you to identify areas where you need more information." Definition of a preliminary Regulatory Impact Assessment by the National Audit Office in the UK: United Kingdom Cabinet Office, "Better policy making: a guide to Regulatory Impact Assessment", 2003. http://www.ond.vlaanderen.be/vereenvoudiging/pdf/BritseRiaGids.pdf

[53] Impact Assessment Guidelines, European Commission, 15 January 2009, http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf

the initial quality baseline for the data that will be needed in order to make a full impact assessment for any model that might be selected for further analysis.

170. The information has been collected through desk research and extensive discussions with the Global Multidisciplinary Expert Panel. Information used for the quantitative assessment includes monitoring or evaluation reports, impact assessments, studies carried out by or for the EU Commission, statistical data from Eurostat and others, studies and research by EU agencies, data available at national or regional level in the Member States and internal data sources from the network of PricewaterhouseCoopers. An extensive bibliography is included in Annex 4. It gives an overview of the sources used in this Study and also of the material that was researched but whose reliability could not be verified and that was therefore not used as a source.

171. We attempt to estimate all costs as accurately as possible. However, due to a lack of data and due to data quality issues, some of the costs are not quantifiable at this time and assumptions have needed to be made. For our detailed overview of the data quality issues and assumptions made, we refer to section 6.

172. The assessment is performed on a model-by-model basis. For each model the same implementation scenarios (various possible time frames) are used.

5.3 **Time frame of the assessment**

173. The quantitative analysis uses assumptions on the time it takes to prepare a new tax directive at an EU level and the time it takes the Member States to implement a directive. Based on experience with the legislative process for drafting tax directives, we assume 4 years will elapse between the time the Commission publishes its first proposal for a directive and final adoption of the directive by the Council.

174. After adoption of the new directive, we assume the Member States will have 3 to 5 years to implement it, depending on the model.

175. In the assessment, we take into account three alternative scenarios for implementation by the Member States. The objective of studying alternative implementation scenarios is to test the impact that time can be expected to have on both the total costs and benefits when parts of the implementation process are shifted. This is important as costs will normally be incurred before benefits are realised. Hence, the budgetary impact and the financing cost of each of the models will not only depend on the characteristics and functional requirements of each model but also on the pace at which they are implemented. The three scenarios for implementation that are described below are only conceptual, i.e. other scenarios are possible.

176. *Scenario 1*: 6 pilot Member States implement a pilot. After an evaluation, the model is implemented in the other 21 Member States at the same pace.

177. *Scenario 2*: All 27 Member States implement the model at the same time. In project management terms, this is called a *"big bang"* scenario.

178. *Scenario 3*: 6 pilot Member States implement a pilot. After an evaluation, the model is implemented in a phased manner: the other Member States gradually adopt the model over a period of 6 years.

179. The Net Present Value of both the costs and the benefits will of course greatly depend on the time frame under review. A longer time frame allows for a more realistic view of the cost coverage percentage of the new model and provides a more-accurate answer to the basic question of whether Member States should invest in implementing the models. This time frame allows consideration of the preparation and implementation phase, as well as the operational phase of each model, taking into account replacement investments and the costs of maintaining the system over a longer time frame.

180. The time frame considered in the assessment is 2011-2038. As in most scenarios the models will be fully operational from 2020 or 2024, this allows for a proper review of the way costs develop over time under the various scenarios and models. We assume that the benefit in terms of a reduction of the VAT Gap will only be effective from the year in which all Member States are fully operational. We do this to account for the lead time of the investment, the uncertainty on the movements of fraudsters in the EU-27 and out of prudency not to take this benefit into account too early in the implementation.

181. 2009 is the base year for the quantitative assessment of the present model.

182. We assumed that, during the above-mentioned time frames the number of Member States remains 27. Enlargement of the EU would have an impact on several cost drivers (see section 6) such as the number of tax authorities and taxable persons. However, it is not possible to assess (and thus take into account) the likelihood and timing of accession of new Member States.

6 Data-gathering issues and general assumptions on cost drivers and benefits

6.1 Data-gathering issues

183. The impact assessment is based on existing studies and figures that are publicly available and information with regard to technological solutions comparable to the solutions proposed in the selected models. This information is used to make estimations of the potential costs and benefits of each model.

184. Despite thorough research, several general and specific data issues were encountered during the data-collection phase. Below we list the major issues encountered.

185. General data issues:

- data is lacking (e.g. data has not been measured in the past for each Member State);
- data from different sources is contradictory;
- in studies and reports, data sources are not completely documented; consequently the data source could not be checked for its validity and thus may not be reliable;
- data that is available is often reported in different years or is based on different calculation methods or definitions.

186. Furthermore, differences in legislation and reporting obligations also lead to data-collection issues:

- the thresholds for VAT registration differ in each Member State. This leads to large variances in the number of taxable persons registered in Member States and hence the basis for the cost/benefit calculation;
- the components of the VAT Gap differ between Member States. Furthermore, the VAT Gap Member States report shows a large standard deviation. This means the benefits of introducing the models will be different for each Member State;
- the frequency for filing VAT returns (monthly, quarterly, yearly) varies between Member States. This can have an impact on the benefits (reduction of administrative burden);
- the maturity and penetration of modern technology used by tax administrations and taxable persons differs according to industry sector, the size of the taxable person and Member State. This will have an impact on the investment costs that are necessary to implement a certain model. For instance, some Member States have already implemented standard audit files for tax or have in place specific auditing software, and taxable persons have adopted e-invoicing to varying degrees in the different Member States.

187. These differentiating factors have not been taken into account in this Study. The figures are based on existing, average figures for the EU-27 (whose reliability could not be tested). The results are consequently merely indicative and will need to be fine tuned and tested before final conclusions can be made about, say, the budgetary consequences of a certain model. The figures reported in this Study merely serve as a preliminary means to compare the various models. As the calculations for each model are based on the same data and assumptions, we believe the lack of data quality does not greatly influence the major preliminary conclusions that can be drawn from this assessment.

188. Due to the importance of this issue, we describe the data quality and the assumptions that have been made in this Study in detail below. Figures reported further on in this Study, such as NPV calculations, can only be interpreted taking into account the fundamental remarks in this section.

6.2 Data issues and assumptions related to the main cost drivers

6.2.1 Overview of the cost drivers per model

189. In the table below, we have indicated the relevant main cost drivers for each of the 4 models.

Main Cost drivers	Automated or manual split payment model	Central VAT monitoring database model	Data warehouse model	Certified taxable person model
Number of tax authorities	✓	✓	✓	✓
Number of taxable persons	✓	✓	✓	✓
Number of VAT returns	✓	✓		
Number of invoices or payments	✓	✓		

Table 3 – Main cost drivers of the four models

190. Below, we describe in greater depth the available data, data issues and assumptions for these cost drivers.

6.2.2 Number of tax authorities

6.2.2.1 Available data

191. For the purposes of the quantitative assessment, 27 tax authorities are in scope.[54]

6.2.2.2 Issues

192. In our calculations we assume the collection models will be implemented at the level of the Member States. This means investment costs and operational costs borne by the tax authority will have to be multiplied by 27.

193. However, there will be variances to this average investment and operational cost for a Member State due to:

- differences in scope, e.g. number of taxable persons to be managed, number of VAT refunds to be granted;
- differences in the existing technology used in the Member States, e.g. Portugal, Austria, Slovenia have already implemented or are in the process of implementing the Standard Audit File for Tax, which is a critical element of one of the selected models;
- different functional requirements: the cost of implementing a new application will also depend on how it is to be integrated with existing systems. Integration of, say, the current accounts in the automated or manual split payment model with a national register of taxable persons or with VIES is an option;
- differences in organisation: depending on the level of decentralisation of tax authority departments, the cost of implementing a new technology and, say, training will vary.

6.2.2.3 Assumptions

194. All investment and operational costs for which tax authority is a valid cost driver are multiplied by 27 or are considered on the basis of the entire EU-27. Hence, abstraction is made of the fact that the starting point and the local requirements for individual Member States might be different.

195. In the scenarios where gradual implementation is anticipated (Member States piloting the implementation or a phased adoption), a percentage of the total cost is used (i.e. 6/27 of the total investment cost in the scenario where 6 Member States implement the pilot). In other words, actual differences between Member States, e.g. Member States could have a centralised or decentralised tax office structure, some

[54] Tax authorities in the European Union, 2010 http://ec.europa.eu/taxation_customs/common/links/tax/index_en.htm.

Member States could already make use of technologies implemented in one or more of the four models are disregarded. Furthermore, the issue that specific Member States need to be appointed as pilots is avoided.

196. When new Member States would join the EU this would increase the costs and benefits accordingly. In this Study we make abstraction of a possible enlargement of the EU.

6.2.3 Number of taxable persons

6.2.3.1 Available data

197. The number of taxable persons[55] is one of the main cost drivers not only for the current VAT model in the EU-27 but also for the quantitative assessment of the selected models. Data is available from DG Taxud, IOTA[56] and the websites of the individual Member States.

6.2.3.2 Issues

198. A comparison of the data from these various sources shows that no complete data set is available for all Member States for the base year 2009. In particular, we did not find any data for Romania. Furthermore, the number of taxable persons needs to be forecasted according to the time frame of each model. However, limited data was available to establish a base for forecasting this future growth.

6.2.3.3 Assumptions

199. For Romania, none of the datasets offered information on the number of taxable persons. A search of statistical and financial websites of this Member State was also unfruitful. Hence, for now and for the purposes of the quantitative assessment, the number of taxable persons in Romania has been extrapolated based on the number of taxable persons known for the Czech Republic. We based this extrapolation on the similarity of the two countries' GDP figures and the similar VAT registration threshold applied by them.

200. However: the numbers of taxable persons available for the Czech Republic may not be 100% reliable and GDP might not be the only (or best) indicator to estimate the number of taxable persons in Romania.

201. In making our assumptions on how to account for timing differences, we refer to the United Kingdom, for which we found solid data on changes in the numbers of

[55] For VAT purposes, a taxable person is any individual, partnership, company or whatever that supplies taxable goods and services in the course of its business. However, if the annual turnover of this person is less than a certain limit (the threshold), which differs according to Member State, the person does not have to charge VAT on its sales. http://ec.europa.eu/taxation_customs/taxation/vat/how_vat_works/index_en.htm.

[56] Intra-European Organisation of Tax administration, Number of taxable persons in the European Union, http://www.iota-tax.org/.

taxable persons since 1973.[57] The average annual growth rate of the number of taxable persons in the UK since 1973 is 1.38%. The graph shows the actual number of taxable persons in each financial year and a trend line indicating the steady growth rate.

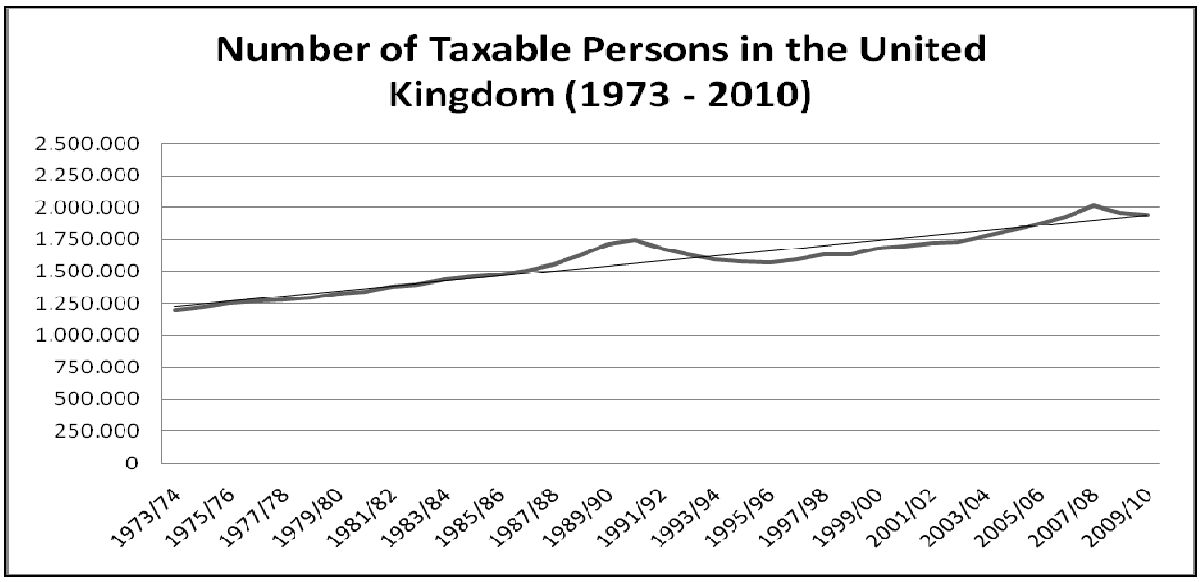


Figure 18 – Evolution in the number of taxable persons in the United Kingdom

202. However, there remain certain factors that are difficult to account for given the diversity of the Member States:

- influence of possible changes in the VAT registration threshold per Member State (such as in the UK, when the threshold was lowered in 1989);
- influence of the financial crisis (a first indication of this effect was noticeable for the UK in 2009);
- differences in legislation;
- differences in economic growth rates;
- differences in the level of entrepreneurship.

203. We tested this assumption and found confirmation of this growth rate by comparing it with changes in the number of Belgian taxable persons since 2007.[58] The average annual growth rate of the number of taxable persons in Belgium since 2007 is 1,31%. The difference with the UK annual growth rate in the number of taxable persons is 0,07% (see Table 4 – Number of taxable persons in Belgium).

[57] HM Revenue & Customs, Number of registered traders 1973-2010, http://www.hmrc.gov.uk/stats/tax_receipts/table1-4.pdf.

[58] http://statbel.fgov.be/nl/statistieken/cijfers/economie/ondernemingen/levensloop/index.jsp.

Number of taxable persons in Belgium per annum		
Year	Number of Taxable Persons	Growth in % year on year
2007	739.542	-
2008	755.654	2,18%
2009	763.831	1,08%
2010	768.915	0,67%
Average annual growth rate of taxable persons in Belgium		**1,31%**

Table 4 – Number of taxable persons in Belgium

204. We must point out that, applying the UK annual growth rate in number of taxable persons to all Member States creates a certain margin of error and it is open to discussion whether the UK annual growth rate in number of taxable persons is representative for all the Member States.

205. Another way of testing how representative the UK historical growth rates are is to do a comparison of changes in the GDP of the Member States to calculate time frame differences. This test is based on the assumption that the number of taxable persons in an economy is correlated to its GDP. To test this, we present the average growth rate of GDP since 2000 in the EU-27 based on data from Eurostat.[59] These growth rates manifest a wide range compared to the average growth rates of taxable persons in the UK and Belgium, However, GDP may not be the only (or best) indicator to forecast future growth in number of taxable persons.

[59] Eurostat, Gross domestic product at market prices, http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts/data/main_tables.

Average annual growth rate (%) of GDP in the EU-27 (2000/*2001-2010)	
AT	3,02
BE	n/a
BG	9,8
CY	n/a
CZ	8,97
DE	1,49
DK	2,95
EE	9,25
EL*	5,3
ES	5,6
FI	3,01
FR	3,07
HU	6,61
IE	5,72
IT	2,56
LT	10,22
LU	6,11
LV	10,05
MT*	3,51
NL	3,77
PL	7,09
PT	2,45
RO	13,49
SE	1,56
SI	4,9
SK	13,07
UK	0,17
EU-27	**3,13**

Table 5 – Average annual GDP growth rate in the Member States (2000-2010)

206. For certain Member States there appears to be a large variance in the GDP growth (e.g. The United Kingdom has had strong fluctuations the last years due to the financial crisis with a low average growth rate of 0,17% over the past ten years as a result). However, for the purposes of the preliminary quantitative assessment, we use the average EU-27 GDP growth rate (3,13% between 2000 and 2010) as an indicator for growth in numbers of taxable persons for those Member States whose average GDP growth rate was higher than the average GDP growth rate of the EU-27. For those Member States whose GDP growth rate was less than the EU-27 average, we use the UK growth rate in the number of taxable persons as presented before. This results in a full dataset, accounted for the year 2009 as follows:

Member State	Estimated number of taxable persons in 2009
AT	797.886
BE	763.831
BG	172.796
CY	72.928
CZ	720.894
DE	5.736.142
DK	328.749
EE	64.432
EL	1.665.268
ES	3.659.284
FI	569.877
FR	4.010.706
HU	570.723
IE	296.392
IT	5.847.559
LT	70.650
LU	57.589
LV	83.390
MT	55.630
NL	1.453.000
PL	2.363.500
PT	1.576.285
RO	720.894
SE	1.010.567
SI	92.699
SK	187.564
UK	1.946.688
EU-27	**34.895.924**

Table 6 – Estimated number of taxable persons in 2009

207. We use this dataset on the number of taxable persons for the purposes of the quantitative assessment. However, we notice some remarkable differences between similar Member States i.e. Member States with similar GDP ranges. Internal research[60] on VAT registration thresholds in the Member States indicates that the number of taxable persons in a Member State is determined by the VAT registration threshold.

[60] PricewaterhouseCoopers, A Guide to VAT in the EU 27, Norway and Switzerland, 2010.

Division of Member States based their on VAT registration threshold		
No threshold	Threshold taxable turnover < EUR 30.000	Threshold EUR 30.000 < taxable turnover < EUR 80.000
Germany	Austria	Czech Republic
Greece	Belgium	France
Hungary	Bulgaria	Ireland
Italy	Cyprus	Malta
The Netherlands	Denmark	Romania
Portugal	Estonia	Slovakia
Spain	Finland	The United Kingdom
Sweden	Latvia	
	Lithuania	
	Luxembourg	
	Poland	
	Slovenia	

Table 7 – Division of Member States based on their VAT registration threshold

208. When considering the above table, it becomes apparent that for, say, Portugal (1,6 million taxable persons) and Italy (5,8 million taxable persons) there are no thresholds, whereas for the UK (1,9 million taxable persons), Austria (0,8 million taxable persons) and Belgium (0,8 million taxable persons) there are thresholds for registering for VAT [61].

209. It becomes apparent that there is a large variance in requirements among this group of 35 million taxable persons. It is a difficult exercise to estimate the minimal or maximal costs taxable persons will incur, especially because no further differentiation can be made (e.g. size, typology). Under these circumstances and for the purposes of the quantitative assessment we made prudent estimations (see section 7) for the average costs of each model which we believe will be incurred by the majority of taxable persons. These (min-max) cost estimations exclude those taxable persons that would incur the maximal cost (i.e. to implement e.g. a full-scale system for e-invoicing) as multiplying the entire population of taxable persons by the maximal costs only a few taxable persons incur would set the entire estimation out of proportion. We advise caution in interpreting and analysing these cost estimations as more precise information is warranted to make more exact estimations.

61 PricewaterhouseCoopers, A Guide to VAT in the EU 27, Norway and Switzerland, 2010.

6.2.4 Number of VAT returns

6.2.4.1 Data available

210. Via our desk research, we have identified estimations that, in the UK, an average taxable person files 4 VAT returns per annum.[62] Furthermore we identified that nearly all Member States have a quarterly or monthly VAT filing obligation.[63]

6.2.4.2 Issues

211. The frequency of filing VAT returns strongly differs in Member States and generally depends on the turnover of the relevant taxable person. We have not been able to classify taxable persons into groups according to their turnover in each Member State. Consequently, major variances will occur in the number of VAT returns filed by taxable persons individually.

212. Furthermore, we have identified that there may be differences between the time of payment of VAT to the tax authority and the time the relevant VAT return is filed. In Italy, for example, VAT returns should be filed on a yearly basis. However, the payment of VAT due should be settled on a monthly or quarterly basis, based on a turnover threshold. In this respect, the number of VAT returns filed may not be representative for the number of times VAT needs to be settled. Moreover, there appears to be a trend in the EU of quicker and more frequent VAT filing. However this trend is not taken into account in this Study as an increase in the frequency of VAT returns does not have a significant impact on the costs of the models.

6.2.4.3 Assumptions

213. Based on the fact that most Member States impose the obligation to file VAT returns on a quarterly basis and taking into account the fact that a lot of taxable persons have to file VAT returns at that interval, we assume that an average taxable person in the EU has to file 4 VAT returns on a yearly basis.

6.2.5 Number of payments and number of invoices

6.2.5.1 Available data

214. The total number of payments and the total number of invoices are important cost drivers within the different models: in the case of a split payment of a transaction subject to VAT, the number of transactions (payment data) the banks need to process is doubled. In the case of a central VAT monitoring database, the number of invoices will be a main cost driver.

[62] National Audit office, HM Revenue & Customs, Filing VAT and Company Tax returns, 2006.
[63] PricewaterhouseCoopers, A Guide to VAT in the EU 27, Norway and Switzerland, 2010.

215. Several sources (European Banking Association[64], Billentis[65]) indicate that roughly 30 billion invoices are issued in Europe each year. The author of the Billentis report stated in a telephone conversation that "all European countries except Russia are included in the figures. Reduced to EU-27, the invoice volume is 29 billion" (Bruno Koch, 2010). This number could not be validated. Furthermore, it could not be verified how many of these invoices were issued for transactions subject to VAT (as invoices relating to transactions that are VAT exempt are also included in the figures).

216. No figures were found on the total number of B2B payments. We found various data regarding the total number of retail payments.[66]

The number of invoices can be split into B2B and B2C transactions

217. The Billentis report states that 50% of the invoices issued in Europe relate to B2B transactions and 50% to B2C transactions. For retail transactions, the share of B2C transactions will be higher. These figures could not be verified.

218. An overview of the figures that are stated in various reports and studies indicates that there are large differences in the quantities of transactions, depending on which kinds of transactions are included in the scope of a specific model.

The total number of invoices in the EU-27 in 2009	The total number of B2B invoices	The total number of B2C invoices
29.000.000.000	14.500.000.000	14.500.000.000

Table 8 – Total number of invoices (B2B-B2C) in the EU-27 in 2009

6.2.5.2 Issues

219. All available data refers to one mother source, notably the Billentis Report of 2009.

220. For the purposes of the quantitative assessment, it has to be taken into account that the cost and benefits of a model will vary tremendously depending on the number of transactions or invoices that will flow through the model. However, as

[64] European Banking Association, E-Invoicing 2010 Report, https://www.abe-eba.eu/Documents-N=E-InvoicingDocuments-L=EN.aspx, 2010.
[65] Billentis report, "E-invoicing / e-billing in Europe, taking the next step towards automated and optimised processes", February 2009; Euro Banking Association (EBA) and Innopay, E-invoicing 2008 European market description and analysis, 2008.
[66] PricewaterhouseCoopers, M&A opportunities in Europe's retail payments market under SEPA, http://www.pwc.com/en_GX/gx/financial-services/pdf/sepa_brochure.pdf.

there is no accurate data on the number of B2B payments (which is relevant for split payment model) or on the number of electronic invoices (which is relevant for central VAT monitoring database model), we have to make assumptions in order to attempt a quantitative assessment.

6.2.5.3 Assumptions

221. We assume that the number of invoices in the Billentis Report issued in a B2B environment is equal to the number of payments made. Indeed, in a B2B transaction, in principle an invoice needs to be issued. Although there are situations in which an invoice is issued but no VAT is due (e.g. exportation, intra-Community supplies, and reverse charge), there will also be transactions for which one invoice is issued but multiple payments are made. Although this number is an estimate, we feel that this is currently the closest estimate possible for the number of B2B transactions. Therefore, the number of e-invoices in the model will amount to 14.500 million per annum.

222. During our desk research, we have not found sufficiently reliable data on the growth rate in the number of invoices and payments in a B2B environment. Therefore, we make a prudent assumption that the growth rate will amount to 1% per annum.

6.3 **Assumptions related to benefits**

223. The actual costs and benefits of the existing VAT collection models in the Member States can be used as a base line to compare the efficiency and effectiveness of the various models. To quantify the costs and benefits relating to the current VAT collection model in the Member States, we collected data on:

- *VAT Gap: source 1*: the total amount of VAT collected (net) and the VAT Gap:[69] these amounts give an indication of the total volumes to be dealt with by the models and the potential increased VAT revenues should the model succeed in closing (part of) the VAT Gap;
- *VAT Gap: source 2*: VAT collected as a % of GDP:[67] these figures serve as a check on the reliability of the data from the Reckon Report and allow for an update and forecast of the VAT Gap for the period 2010-2038, which is needed in order to calculate the NPV of benefits in each model;
- *the potential of each model to reduce the VAT Gap;*
- *the benefits of e-invoicing for taxable persons;*
- *administrative burden on the taxable person*: cost of compliance by taxable persons with the VAT legislation;

[67] European Commission, Taxation trends in the European Union, Data for the EU Member States and Norway, 2010, http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analysis/tax_structures/2010/2010_full_text_en.pdf.

- *administrative burden to the tax authority*: costs of tax authority/IT costs:[68] these figures give an indication of the total costs of tax administration and the share of IT costs.

6.3.1 The VAT Gap: source 1: VAT collected and the VAT Gap

6.3.1.1 Available data

224. Our desk research resulted in the collection of data on VAT revenues of the Member States in 2006. The data, presented in Table 9, from the Reckon Report[69] (2009) relates to 2000-2006 and calculates the VAT Gap, which is defined as more than just a measure of VAT fraud:

- the VAT Gap might also include VAT not paid as a result of legitimate tax avoidance measures;
- the VAT Gap is estimated primarily on the basis of national accounts' data and therefore depends on the accuracy and completeness of such data. Moreover, it does not take account of taxable activities that are outside the scope of national accounts;
- no adjustment of the VAT Gap has been made to remove VAT that is not collected due to insolvencies arising as a result of regular business activity, yet this portion of VAT that is not remitted is not due to VAT fraud.

[68] OECD, Tax Administration in OECD and Selected Non-OECD Countries prepared by the forum on Tax administration (2008) Aggregated Cost of Tax administrations.http://www.oecd.org/dataoecd/57/23/42012907.pdf.

[69] Reckon Report, "Study to quantify and analyse the VAT Gap in the EU-25 Member States", 21 September 2009.http://ec.europa.eu/taxation_customs/resources/documents/taxation/tax_cooperation/combating_tax_fraud/reckon_report_sep2009.pdf.

Reckon Report, in EUR for 2006	Theoretical VAT liability	The total amount of VAT collected	The VAT Gap	VAT Gap as a share of theoretical liability
AT	22.844.000.000	19.735.000.000	3.109.000.000	14%
BE	25.360.000.000	22.569.000.000	2.791.000.000	11%
BG	N/A	N/A	N/A	N/A
CY	N/A	N/A	N/A	N/A
CZ	9.216.000.000	7.541.000.000	1.675.000.000	18%
DE	164.115.000.000	147.150.000.000	16.965.000.000	10%
DK	23.611.000.000	22.560.000.000	1.051.000.000	4%
EE	1.325.000.000	1.215.000.000	110.000.000	8%
EL	21.746.000.000	15.183.000.000	6.563.000.000	30%
ES	63.013.000.000	61.595.000.000	1.418.000.000	2%
FI	15.176.000.000	14.418.000.000	758.000.000	5%
FR	140.817.000.000	131.017.000.000	9.800.000.000	7%
HU	8.882.000.000	6.813.000.000	2.069.000.000	23%
IE	14.043.000.000	13.802.000.000	241.000.000	2%
IT	119.197.000.000	92.860.000.000	26.337.000.000	22%
LT	2.335.000.000	1.826.000.000	509.000.000	22%
LU	1.961.000.000	1.941.000.000	20.000.000	1%
LV	1.751.000.000	1.374.000.000	377.000.000	22%
MT	463.000.000	410.000.000	53.000.000	11%
NL	41.269.000.000	39.888.000.000	1.381.000.000	3%
PL	23.784.000.000	22.127.000.000	1.657.000.000	7%
PT	14.371.000.000	13.757.000.000	614.000.000	4%
RO	N/A	N/A	N/A	N/A
SE	29.294.000.000	28.487.000.000	807.000.000	3%
SI	2.764.000.000	2.647.000.000	117.000.000	4%
SK	4.632.000.000	3.320.000.000	1.312.000.000	28%
UK	155.697.000.000	128.721.000.000	26.976.000.000	17%
Total	**907.666.000.000**	**800.956.000.000**	**106.710.000.000**	**12%**

Table 9 – Reckon Report data on the VAT Gap in 2006

225. The calculated VAT Gap is based on a comparison of accrued VAT receipts with a theoretical net VAT liability for the economy as a whole. The theoretical net liability is estimated by identifying the categories of expenditure that give rise to irrecoverable VAT and combining these with appropriate VAT rates.

226. After estimating the missing values for Bulgaria, Cyprus and Romania (using the relative GDP of the 12 latest joiners to the EU-27) and adjusting for 2009 (by EU-27 average GDP growth) the theoretical VAT liability, the VAT collected and the VAT Gap for the EU-27 are:

Calculated VAT Gap based on Reckon Report, in EUR for 2009	Theoretical VAT liability	The total amount of VAT collected	The VAT Gap	VAT Gap as a share of theoretical liability
AT	25.056.892.210	21.646.724.206	3.410.168.004	14%
BE	27.816.616.462	24.755.253.033	3.061.363.428	11%
BG	2.404.458.865	2.060.958.513	343.500.352	14%
CY	1.491.839.722	1.278.715.897	213.123.825	14%
CZ	10.108.751.471	8.271.494.666	1.837.256.805	18%
DE	180.012.776.444	161.404.381.402	18.608.395.042	10%
DK	25.898.191.296	24.745.381.206	1.152.810.091	4%
EE	1.453.352.398	1.332.696.727	120.655.671	8%
EL	23.852.529.242	16.653.773.176	7.198.756.066	30%
ES	69.117.052.567	67.561.691.284	1.555.361.283	2%
FI	16.646.095.088	15.814.667.829	831.427.259	5%
FR	154.457.905.375	143.708.581.978	10.749.323.396	7%
HU	9.742.396.980	7.472.973.500	2.269.423.480	23%
IE	15.403.341.679	15.138.996.073	264.345.606	2%
IT	130.743.581.719	101.855.323.527	28.888.258.192	22%
LT	2.561.190.830	2.002.884.135	558.306.695	22%
LU	2.150.961.549	2.129.024.154	21.937.395	1%
LV	1.920.618.905	1.507.099.015	413.519.890	22%
MT	507.850.687	449.716.591	58.134.096	11%
NL	45.266.717.065	43.751.939.962	1.514.777.103	3%
PL	26.087.949.761	24.270.436.611	1.817.513.150	7%
PT	15.763.114.952	15.089.636.935	673.478.017	4%
RO	8.896.770.636	7.625.780.357	1.270.990.279	14%
SE	32.131.701.996	31.246.528.121	885.173.876	3%
SI	3.031.747.946	2.903.414.187	128.333.759	4%
SK	5.080.700.609	3.641.607.518	1.439.093.091	28%
UK	170.779.327.021	141.190.169.068	29.589.157.952	17%
Total	**1.008.384.433.473**	**889.509.849.671**	**118.874.583.802**	**12%**

Table 10 – Calculated VAT Gap in 2009 (based on Reckon Report)

6.3.2 The VAT Gap: second source: VAT collected as a percentage of GDP

6.3.2.1 Available data

227. In addition to the data in the Reckon Report there is also data available from the European Commission[70] on VAT as a percentage of GDP. This data covers a longer time frame, from 1995 until 2008. The VAT Gap expressed as a percentage of GDP is interesting as this indicator can be used in forecasts by combining it with a GDP forecast. The different indicators in the Reckon Report and the data from the European Commission allow one to calculate a formula that can be used to forecast the VAT Gap and thus the potential benefits that the models could generate. Below, the data for the period 2006-2008 is listed.

[70] European Commission, Taxation trends in the European Union, Data for the EU Member States and Norway, 2010.http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analysis/tax_structures/2010/2010_full_text_en.pdf.

VAT as % (a) of GDP	2006	2007	2008
AT	7,7	7,7	7,8
BE	7,1	7,1	7
BG	12,4	12,1	11,5
CY	10,4	11,1	11,3
CZ	6,6	6,6	7,1
DE	6,3	7,0	7
DK	10,3	10,4	10,1
EE	9,2	9,1	8
EL	7,2	7,3	7,1
ES	6,4	6,1	5,3
FI	8,6	8,4	8,4
FR	7,3	7,2	7
HU	7,6	7,9	7,8
IE	7,8	7,6	7,1
IT	6,3	6,2	5,9
LT	7,6	8,2	8,1
LU	5,7	5,8	6
LV	8,6	8,2	6,6
MT	8,0	7,7	8
NL	7,4	7,5	7,3
PL	8,1	8,3	8
PT	8,8	8,8	8,7
RO	7,9	8,1	7,9
SE	9,1	9,2	9,4
SI	8,5	8,5	8,4
SK	7,5	6,7	6,9
UK	6,6	6,6	6,3
EU-27 (weighted averages)	**7**	**7,1**	**6,9**

Table 11 – VAT as a percentage of GDP (Taxation trends, 2010)

228. By combining the two data sources, a formula is derived that should approximate the estimations of the VAT Gap made in the Reckon Report. If this formula is consistent with the Reckon Report, then it not only serves as a valuable check on the Reckon Report but it also allows us to use the calculated GDP growth rate of the EU-27 to forecast the VAT Gap for the period 2010-2038.

Reckon Report
T = Theoretical VAT liability
A = Total amount of VAT collected (net)
G = Total estimated VAT Gap (=T–A)
g = VAT Gap as share of theoretical VAT liability (=g*T)

Taxation trends
a = A as % of GDP
A = Total amount of VAT collected (net) (=a*GDP)

When: T–A = G = g*T (Reckon Report)
And: A = a*GDP (Taxation Trends)

Then: $G = g*(G + A)$ *G=G*T with T= A+G*

$$G = \frac{(g*A)}{(1-g)}$$

$$G = \frac{(g*a*GDP)}{(1-g)}$$ *with A=a*GDP*

Figure 19 – Formula to calculate the VAT Gap

229. Based on the evolution of GDP and assuming that *'a'* remains stable and *'g'* only varies according to the impact of a model to close the VAT Gap, this formula allows one to make rough estimations of the size of the VAT Gap in the future based on the GDP growth rate.

230. The results of the VAT Gap formula have been tested for 2006 GDP (Eurostat) with percentages *'a'* (Taxation trends) and *'g' (*Reckon Report) also referring to 2006. The calculated VAT Gap was then compared with the VAT Gap of 2006 provided by the Reckon Report (Table 12).

Test of the VAT Gap formula with the Reckon Report in order to allow GDP as a forecaster of the VAT Gap						
Member States	GDP (in EUR) in 2006 (Eurostat or *Member State data*)	(a) VAT as a % of GDP in 2006 (Taxation trends)	(g) The VAT Gap as a % of theoretical liability in 2006	VAT Gap: formula (in EUR)	VAT Gap: Reckon report 2006 (in EUR)	Margin of error
AT	252.012.300.000	7,7%	14%	3.158.944.877	3.109.000.000	1,6%
BE	*332.308.000.000*	7,1%	11%	2.917.740.511	2.791.000.000	4,3%
BG	23.265.800.000	12,4%	14%	480.836.705	313.164.217	34,9%
CY	*14.435.200.000*	10,4%	14%	250.215.426	194.301.855	22,3%
CZ	107.010.900.000	6,6%	18%	1.550.353.039	1.675.000.000	-8,0%
DE	2.313.070.000.000	6,3%	10%	16.191.490.000	16.965.000.000	-4,8%
DK	214.406.600.000	10,3%	4%	920.161.658	1.051.000.000	-14,2%
EE	12.295.000.000	9,2%	8%	98.360.000	110.000.000	-11,8%
EL	204.200.400.000	7,2%	30%	6.301.040.914	6.563.000.000	-4,2%
ES	945.313.000.000	6,4%	2%	1.234.694.531	1.418.000.000	-14,8%
FI	164.243.000.000	8,6%	5%	743.415.684	758.000.000	-2,0%
FR	1.764.331.800.000	7,3%	7%	9.694.339.245	9.800.000.000	-1,1%
HU	92.163.100.000	7,6%	23%	2.092.222.062	2.069.000.000	1,1%
IE	170.772.600.000	7,8%	2%	271.842.098	241.000.000	11,3%
IT	1.458.583.900.000	6,3%	22%	25.917.913.915	26.337.000.000	-1,6%
LT	22.507.300.000	7,6%	22%	482.464.174	509.000.000	-5,5%
LU	31.969.400.000	5,7%	1%	18.406.624	20.000.000	-8,7%
LV	14.620.800.000	8,6%	22%	354.648.123	377.000.000	-6,3%
MT	4.951.400.000	8,0%	11%	48.957.663	53.000.000	-8,3%
NL	530.833.000.000	7,4%	3%	1.214.896.144	1.381.000.000	-13,7%
PL	259.641.300.000	8,1%	7%	1.582.974.377	1.657.000.000	-4,7%
PT	151.163.400.000	8,8%	4%	554.265.800	614.000.000	-10,8%
RO	86.086.100.000	7,9%	14%	1.133.490.960	1.158.743.139	-2,2%
SE	311.174.100.000	9,1%	3%	875.778.653	807.000.000	7,9%
SI	30.429.000.000	8,5%	4%	107.769.375	117.000.000	-8,6%
SK	41.732.900.000	7,5%	28%	1.217.209.583	1.312.000.000	-7,8%
UK	1.886.272.300.000	6,6%	17%	25.498.765.308	26.976.000.000	-5,8%
Total	11.439.792.600.000			104.913.197.452	108.376.209.211	-3,3%

Table 12 – Test of the VAT Gap formula

6.3.2.2 Issues

231. The results of the two estimation methods show large variances for some Member States. For the EU-27, the VAT Gap can be estimated at between EUR 105 billion and 108 billion with a margin of error of 3,3% in 2006. When adjusted for future growth using the average GDP growth rate of 3,13%, the total VAT Gap for 2009 in the EU-27 is approximately EUR 118,8 billion. However, it should be noted that significant variances exist at the level of the individual Member States. Consequently, the total VAT Gap and the aggregate average growth rate should by no means be imputed to the figures of the individual Member States. In order to do this, more accurate data is required.

6.3.2.3 Assumptions

232. To account for the absolute growth of the VAT Gap we use the GDP growth rate as confirmed by the relatively small margin of error at an EU level between the formula and the data from the Reckon Report.

6.3.3 The potential of each model to reduce the VAT Gap

6.3.3.1 Available data

233. In order to calculate the impact of each model on closing the VAT Gap, we first need to identify which elements the VAT Gap is composed of. Producing a bottom-up estimate of the level of VAT fraud in general starts with identifying the different types of fraud and then proceeds to estimating the size of each of these components. However, this requires operational data that is typically only held by national tax authorities and, consequently, is not often made public. In this section, we define the VAT Gap and make estimations of the VAT Gap based on figures from the National Audit Office (NAO) in the UK. The NAO has examined data on VAT fraud in the UK as reported by HMRC.[71] In 2001-2002, HMRC reported an estimated total VAT loss of £10,6 billion using a top down approach[72] (note: this is considerably low when compared to the VAT Gap in the UK in 2006 of £27 billion as calculated in the Reckon report).

234. In the same report, the NAO identified the main types of VAT fraud and made brief estimations of certain VAT losses in the United Kingdom in 2001-2002:

- **Missing trader intra-Community frauds** (UK: £1,77 to £2,75 billion): fraudsters register for VAT, buy goods VAT free from another Member State, sell them on at VAT inclusive prices and then disappear without paying the VAT due to HMRC. This accounts for 17 to 26% of the estimated total VAT loss of £10,6 billion;

- **Threshold fraud** (UK: £0,4 to £0,5 billion): genuine businesses with a turnover above the VAT registration threshold that deliberately do not register for VAT. This accounts for 4 to 5% of the estimated total VAT loss of £10,6 billion;

- **Non-compliance (including suppression fraud)** (UK: £2,5 to £4 billion): by traders in paying the right amount of VAT at the right time either because of genuine mistakes or where they deliberately understate a portion of their

[71] HM Customs and Excise report by the comptroller and auditor general, Tackling VAT Fraud, 3 March 2004. http://www.nao.org.uk/idoc.ashx?docId=f6106999-f4e6-41fa-ba58-9c43bbe780cf&version=-1

[72] The top down approach entails comparing the total level of expenditure in the economy that is theoretically liable for VAT (the theoretical tax liability) with actual VAT receipts and assuming that the difference (the VAT Gap) represents the total revenue loss. It is a global measure based mainly on data from the Office for National Statistics. Customs' estimates using this method show the total VAT loss as being £10.6 billion in 2001-02 and £11.9 billion in 2002-03.

sales or falsely inflate the value of purchases to reduce their VAT liability. This accounts for 24 to 38% of the estimated total VAT loss of £10,6 billion;

- If implemented correctly, **VAT avoidance schemes** (UK: £2,5 to £3 billion) are legal. Even so, it is not considered acceptable for businesses to use schemes that are artificial and have no other business purpose than to save VAT. This accounts for 24 to 28% of the estimated total VAT loss of £10,6 billion;

- **Repayment frauds[73], insolvencies and other types of VAT fraud or losses** account for the remaining VAT loss. Based on the UK data this is estimated to account for 3 to 32% of the estimated total VAT loss of £10,6 billion.

6.3.3.2 Issues

235. Limited data is available on the VAT Gap components for the Member States of the EU-27.

236. The VAT revenue that the UK loses from threshold fraud is likely to be a much smaller proportion of the total amount of VAT collected than in other Member States. This is because the threshold for registering in the UK is considerably higher, meaning that fewer businesses have to register for VAT than in other countries. HMRC estimates that, in 2001-2002, around 1 million businesses in the UK did not have to register for VAT because their turnover did not exceed the threshold.

[73] Fraudsters register for VAT, make false claims for repayments and then abscond.

6.3.3.3 Assumptions

237. To establish how and when each model could reduce the VAT Gap, it is necessary to ascertain the components of the VAT Gap for each Member State (as they could be highly variable) and ascertain which fraud components will with certainty be reduced by each model. This information is not available.

238. For the purposes of the quantitative assessment we use the data available for the UK which we apply to the VAT Gap of the EU-27 to make preliminary prudent estimations of the size of the particular components of the VAT Gap. The result of this exercise is presented in Table 13 below. This exercise has been made for the purposes of the quantitative assessment. However, when interpreting this table it should be taken into account that limited data is available on this subject. Consequently, any data has to be interpreted with extreme caution.

Components of the VAT Gap							
		Missing trader intra-Community frauds	Threshold fraud	Non-compliance (including suppression fraud)	VAT avoidance schemes	Other components of the VAT Gap (e.g. repayment frauds, insolvencies)	Estimated VAT Gap in 2009 in EUR
Distribution of the VAT Gap in the UK according to types of fraud (serves as a benchmark)		17 - 26%	4 - 5%	24 - 38%	24 - 28%	3 - 32%	118.874.583.802
UK benchmark applied to the EU-27 VAT Gap	Min	19.849.812.578	4.485.833.351	28.036.458.444	28.036.458.444	38.466.020.985	
	Max	30.840.104.288	5.607.291.689	44.858.333.510	33.643.750.133	3.925.104.182	

Table 13 – The UK VAT Gap components applied to the EU-27 VAT Gap

239. With a carefully executed qualitative assessment we make high level qualitative assumptions on the potential of each model to close parts of the VAT Gap. In the following tables (Table 14 and Table 15) we present the result of a qualitative assessment.

240. Based on the scope of the model and the timing of the information flow we make assumptions on the effectiveness of each model in terms of fraud reduction potential.

241. Split payment model:

- *scope*: the model is applicable to B2B transactions;
- *timing and effectiveness*: the advantage of the model is that VAT paid is immediately deposited on a blocked VAT bank account. The tax authority can monitor the payment streams real time and can draw funds from blocked VAT bank accounts if necessary.

242. Central VAT monitoring database model:

- *scope*: this model is applicable to transactions for which an invoice is issued (i.e. mainly B2B and to a certain extent B2C);
- *timing and effectiveness*: in this model the supplier is required to send the invoice data in real time to the central VAT monitoring database which will be monitored by the tax authority.

243. Data warehouse model:

- *scope*: this model is applicable to all taxable persons with an obligation to keep an accounting system, hence this includes all transactions;
- *timing and effectiveness*: in this model the tax authority can have direct access to the accounting data of the taxable person.

244. Certified taxable person model:

- *scope*: this model is applicable to all taxable persons with an obligation to keep an accounting system, hence this includes all transactions;
- *timing and effectiveness*: the tax authority can audit more efficiently and effectively, taking into account the VAT Control Framework that taxable person has in place. It should also allow the tax authority to easily match certain data (e.g. invoice data, delivery data and payment data).

245. In the following table (Table 14) we qualify the effectiveness of each model in reducing the components of the VAT Gap based on the scope, timing and effectiveness of the models. We label the potential as *"low", "medium", "medium to high" or "high".*

Fraud categories as defined by the National Audit Office	Missing trader intra-Community frauds	Threshold fraud	Non-compliance (including suppression fraud)	VAT avoidance schemes	Other components of the VAT Gap (e.g. repayment frauds, insolvencies)
Potential reduction under the split payment model Scope: B2B transactions Timing: real-time General effectiveness: Tax authority can monitor the payment streams real time and can draw funds from blocked VAT accounts if necessary.	Medium to high: fraudsters buy goods VAT free so they do not pay VAT. As far as they sell B2B they will be detected. The model attacks the party in the supply chain that asks for VAT refunds. B2C fraud may not be covered but real "carrousels" will no longer be possible.	Low: if these taxable persons sell/buy B2B they will be included in the model and the threshold can be monitored	Medium: the tax authority has a good overview of the payment flows but not necessarily of the complete VAT liabilities	Medium: it will be easier to detect avoidance schemes and to audit supply chains	High: the tax authority can block the money on the blocked VAT account
Potential reduction under the central VAT monitoring database model Scope: B2B e-invoices Timing: real-time General effectiveness: B2B e-invoicing data is available to the tax authority for real-time auditing	Medium to high: all transactions are registered in the database, by monitoring chains of suppliers and purchasers the tax authority has more possibilities to detect fraud. The model will only be fully effective in the area of intra-Community fraud if the model is harmonised in the EU-27	Low: if these taxable persons issue invoices they will be included in the model	Medium: the tax authority has an overview of the VAT liabilities at the moment of invoicing but only for B2B transactions	Medium: it will be easier to detect avoidance schemes and to audit supply chains	Medium: the tax authority can monitor real time the purchase and sales flows
Potential reduction under the data warehouse model Scope: all transactions by all taxable persons Timing: direct access of the tax authority to the accounting data General effectiveness: the tax authority can audit entire supply chains based on the data stored by each taxable person	High: tax authority has more possibilities to reduce fraud as the entire value chain in a sector can be audited and B2B and B2C data are included	Medium: if these taxable persons have the obligation to keep an accounting system, the tax authority can monitor the sales transactions (B2B and B2C)	Medium to high: the tax authority will be able to audit entire value chains in a sector (B2B and B2C) and will also have payment/financial data	Medium to high: it will be easier to detect avoidance schemes and to audit supply chains	Medium: the VAT data can be requested at any moment. The standard format allows to run specific tests to quickly detect issues. Furthermore, the entire value chain can be audited.
Potential reduction under the certified taxable person model Scope: all transactions by all taxable persons Timing: not applicable General effectiveness: improved audit trails allow tax authority to easily match data (e.g. invoice data, delivery data and payment data)	Low: no direct preventative or detective effects	Medium: the tax authority can monitor B2B and B2C transactions from other taxable persons	Medium to high: the tax authority will be able to audit entire value chains in a sector	Medium: it will be easier to detect avoidance schemes and to audit supply chains	Low: detective controls take place ex post

Table 14 – Potential reduction of the VAT Gap under the four models

246. The next step is to quantify the potential of each model to reduce the VAT Gap. We do this based on our qualitative approach in the previous table. The labels "*low", "medium", "medium to high" and "high"* are quantified by percentages ranging from 0 to 90%.

- *"low": The VAT Gap is reduced by 0 to 30% under the model;*
- "*medium*": The VAT Gap is reduced by 30 to 70% under the model[74];
- "medium to high": The VAT Gap is reduced by 50 to 70% under the model
- "high": The VAT Gap is reduced by 70 to 90% under the model[75].

247. In the following table (Table 15) we apply these percentages to the VAT Gap of the EU-27 (see section 6.3). The division of the VAT Gap into components was based on the UK VAT Gap components (see sections 6.3.3.1 and 6.3.3.3).

[74] The medium range is set at 30 to 70%. Which is saying that the medium impact reduces the VAT Gap by 50% with a range of +/- 20%.
[75] We assume no model will eliminate 100% of the VAT Gap. For any model, there will be fraudsters who try to find fraud evasion methods.

Components of the VAT Gap							
		Missing trader intra-Community frauds	Threshold fraud	Non-compliance (including suppression fraud)	VAT avoidance schemes	Other components of the VAT Gap (e.g. repayment frauds, insolvencies)	Estimated VAT Gap in 2009 in EUR
Distribution of the VAT Gap in the UK according to types of fraud (serves as a benchmark)		17 - 26%	4 - 5%	24 - 38%	24 - 28%	3 - 32%	118.874.583.802
UK benchmark applied to the EU-27 VAT Gap	Min	19.849.812.578	4.485.833.351	28.036.458.444	28.036.458.444	38.466.020.985	
	Max	30.840.104.288	5.607.291.689	44.858.333.510	33.643.750.133	3.925.104.182	
Potential of the alternative models to close components of the VAT Gap							
		Missing trader intra-Community frauds	Threshold fraud	Non-compliance (including suppression fraud)	VAT avoidance schemes	Other components of the VAT Gap (e.g. repayment frauds, insolvencies)	Total potential reduction of the VAT Gap in 2009 in EUR
Potential reduction under the split payment model	Min	50%	0%	30%	30%	70%	53.672.996.045
	Max	70%	30%	70%	70%	90%	81.754.312.822
Potential reduction under the central monitoring database model	Min	50%	0%	30%	30%	30%	38.286.587.651
	Max	70%	30%	70%	70%	70%	80.969.291.986
Potential reduction under the datawarehouse model	Min	70%	30%	70%	70%	30%	66.031.466.927
	Max	90%	70%	90%	90%	70%	105.080.646.247
Potential reduction under the certified taxable person model	Min	0%	30%	70%	70%	0%	40.596.791.827
	Max	30%	70%	90%	90%	30%	85.006.542.001

Table 15 – Potential reduction (in %) of the VAT Gap under each model according to the type of VAT fraud

248. We advise caution and consideration when interpreting and analysing these percentages as this is based on a qualitative exercise for the purposes of the quantitative assessment. The results will vary upon the assessment of each individual expert. The table, however, captures the consensus of the best estimates made by various subject matter experts, including the Multidisciplinary Dedicated Core Team and the Global Multidisciplinary Expert Panel.

249. More precise information on the VAT Gap components is warranted to make more exact estimations on the effectiveness of each model to close the VAT Gap.

250. An important remark in this context is of course the fact that mere investment in technology does not in itself generate benefits. The main benefits to be expected are the result of enhanced auditing techniques and more risk-based controls. In other words, the organisation of VAT monitoring will have to be altered and adapted to the new technology in order to be effective in this area.

251. For the purposes of the quantitative assessment we will only take the reduced VAT Gap into consideration as from the year where a model is fully operational in all Member States. This is because we take the lead time of the investment and the uncertainty on the movements of fraudsters in the EU-27 into consideration and also out of prudency not to take this benefit into account too early in the implementation.

6.3.4 Benefits of e-invoicing

6.3.4.1 Data available

252. E-invoicing improves efficiency by eliminating manual tasks, achieving higher reconciliation rates and shortening processing cycle times.. It also improves quality control and responsiveness by providing real-time information; enabling electronic authorisation, as well as authorisation schemes and control points in workflow; enhancing information integrity through authorisation measures and event logging; and allowing better decision support. E-invoicing also supports geographic independence through web-enabled workflow and electronic filing. [76]

253. Currently, 80% to 90% of all invoices are based on paper, and a paper invoice costs between EUR 1.13 and EUR 1.6516. Electronic invoicing, reduces the cost per invoice to between EUR 0.28 and EUR 0.47, a reduction of 70% to 75%.[77]

254. The Billentis Report[78] states that roughly one billion electronic invoices were exchanged between one million businesses and 23 million customers.

[76] SEPA: potential benefits at stake, Capgemini, 2007
[77] SEPA: potential benefits at stake, Capgemini, 2007
http://ec.europa.eu/internal_market/payments/docs/sepa/sepa-capgemini_study-final_report_en.pdf
[78] Billentis report, “E-invoicing / e-billing in Europe, taking the next step towards automated and optimised processes”, February 2009, http://www.billentis.com/Publikationen_e.htm

6.3.4.2 Issues

255. Due to the lack of data on taxable persons it is difficult to say how large the share is of taxable persons in the scope of the model that have already implemented e-invoicing. Furthermore, it is not clear what requirements will be imposed on taxable persons when they have to send their invoice data to the central VAT monitoring database (e.g. specific electronic format, structure of the message). These requirements may have a reduce the benefit of e-invoicing for the taxable person (e.g. a taxable person who currently issues invoices in pdf-format may be required to change his e-invoicing solution if it would be required that the invoice data should be sent in XML to the central VAT monitoring database).

6.3.4.3 Assumptions

Although taxable persons will equally enjoy the benefits of e-invoicing which may be substantially higher then the initial investments (especially on the long run), this benefit is not quantified because it is not clear which requirements will be imposed on taxable persons and because this benefit is not a "*real*" benefit related to the model. Indeed, taxable persons can currently decide to implement e-invoicing and realise benefits related to e-invoicing. Furthermore, for taxable persons who have already implemented an e-invoicing solution, having to comply with specific e-invoicing requirements due to the central VAT monitoring database model will create additional costs without any additional benefit related to the implementation of the e-invoicing solution.

6.3.5 Administrative burden on the taxable person

6.3.5.1 Data available

256. From a taxable person's perspective, there is a cost of complying with VAT regulations. For the purposes of the quantitative assessment of the proposed models, data was also gathered on the number of payments and invoices, as this will drive the administrative burden.

257. Cedric Sandford (C. Sandford, M. R. Godwin and P. J. W. Hardwick, 1989, Administrative and Compliance Costs of Taxation, Bath, United Kingdom, Fiscal Publications) found that, across a sample of the UK industry, VAT compliance costs in broad terms were some 4% of revenues raised.

258. Sandford laid out three separate elements of the costs of compliance:

- the fiscal costs associated to establishing and registering a company, the employee costs of running day-to-day VAT accounting, the cost of expertise to understand and keep up with changes in policies and rates, the cost of filing VAT returns, and the cost of external accountants for operational and advisory services;

- the costs of the time of senior management in overseeing the function – in theory these can be turned into money, but in reality this is a very scarce resource in a company;

- the psychological costs caused by the onus being on the business to conduct its VAT affairs properly, with financial and civil/criminal penalties for failing to do so.

259. A study by Cap Gemini, Deloitte and Ramboll[79] shows that, departing from the hypothesis that all taxable persons will shift to e-invoicing and e-storage, administrative costs measured in the Priority Area VAT are expected to decrease from EUR 38 billion to EUR 20 billion , i.e. minus EUR 18 billion or an average cost reduction of 47,67%. Administrative burdens are expected to decrease from EUR 30 billion to EUR 14 billion (i.e. minus EUR 15 billion or an average cost reduction of 51,47%).

6.3.5.2 Issues

260. In the UK, a NAO study in 1994 found that, in the smallest companies, the cost of VAT compliance was some 20% of the tax paid. A more recent European Commission survey[80] found that the absolute compliance costs (for VAT and corporate taxes combined) corresponded to 1,9% (of sales) for large businesses but 30,9% for small and medium-sized enterprises (SMEs). It is said that VAT compliance costs relative to purchases appear to increase with company size and VAT compliance costs relative to sales decrease with company size. The results also show the presence of a cross-border effect for the amount of VAT compliance costs expressed by the estimated coefficients of the parent company variables. The estimates indicate that parent companies with subsidiaries, branches or permanent establishments abroad have higher VAT compliance costs than parent companies with subsidiaries, branches or permanent establishments in the home state.

261. This means that there are groups of companies that suffer disproportionately from VAT compliance requirements in the European Union. It raises the question whether the models would further increase the costs of compliance on SMEs. And, if so, who should fall within the scope of the models? This question can only be answered if it is combined with the issue of what kinds of businesses are involved in which components of the VAT Gap. The foregoing discussion has shown that there are no data available to draw reliable conclusions on the link between the sizes and types of businesses, the potential reduction in the VAT Gap if they participate in a model and the potential reduction in administrative burden.

[79] EU project on baseline measurement and reduction of administrative costs, Detailed Recommendation on the Tax Law (VAT) Priority Area, Enable and facilitate electronic invoicing and (electronic) storage. http://ec.europa.eu/enterprise/policies/better-regulation/documents/ab_studies_2009_en.htm

[80] European Commission – Taxation and Customs Union, European Tax Survey, Working paper no. 3 October 2004 ISSN 1725-7557 http://ec.europa.eu/taxation_customs/resources/documents/tax_survey.pdf.

6.3.5.3 Assumptions

262. It will only be possible to quantify an increase or decrease of the cost of VAT compliance after clustering and sampling risk-based groups of businesses in various Member States. Interviews with a statistically relevant sample of taxable persons will need to be conducted to gain relevant data. In this Study, only macro data will be used (a percentage of VAT receipts).

6.3.6 Administrative burden on the tax authority

6.3.6.1 Data available

263. A study of tax administrations[81] in OECD and selected non-OECD countries prepared by the Forum on Tax Administration (2008) states data (in local currency) on the aggregate administrative cost for tax functions and the costs of IT in 2007.

[81] OECD, Tax Administration in OECD and Selected Non-OECD Countries prepared by the forum on Tax administration (2008) Aggregated cost of Tax administrations. http://www.oecd.org/dataoecd/57/23/42012907.pdf

Cost of tax functions in 2007 per Member State (in EUR or local currency)	Aggregate administrative costs	IT costs
AT	399.400.000	65.500.000
BE	1.145.100.000	122.800.000
BG	129.000.000	500.000
CY	170.110.000	100.000
CZ	7.206.100.000	1.029.600.000
DE	6.817.000.000	361.000.000
DK	4.971.000.000	863.000.000
EE	590.000.000	n/a
EL	n/a	n/a
ES	1.323.000.000	69.000.000
FI	359.400.000	76.800.000
FR	4.513.000.000	412.000.000
HU	99.231.200.000	11.603.600.000
IE	448.300.000	52.900.000
IT	4.572.900.000	180.200.000
LT	n/a	n/a
LU	81.200.000	n/a
LV	52.000.000	16.000.000
MT	8.800.000	10.000
NL	2.237.000.000	691.000.000
PL	3.257.000.000	n/a
PT	464.400.000	62.300.000
RO	1.043.800.000	n/a
SE	5.864.000.000	1.172.000.000
SI	92.010.000	6.820.000
SK	3.185.000.000	448.000.000
UK	4.773.000.000	n/a

Table 16 – Cost of tax functions in 2007 per Member State

264. These data relate to the total administrative cost of tax functions (including corporate tax, personal income tax). Consequently, the costs relate to more taxes and not only to the cost of VAT collection.

6.3.6.2 Issues

265. When the share of VAT in the total costs of tax functions is known, the cost of collecting VAT can be calculated. Consequently this allows for assumptions on the cost-reduction potential for each model.

6.3.6.3 Assumption

266. In order to calculate the share of VAT in the aggregate tax costs for the EU-27 and, hence, the potential for a reduction in administrative burden from the tax authority's perspective, we calculate the value in euro of aggregate costs per

Member State according to the OECD. Please note that we assume there will be no reduction in the number of staff and we do not take into account the possible reallocation of staff (e.g. less staff could be needed for processing the VAT returns, but more staff could be needed to perform VAT audits).

267. The average 2007 exchange rates are used according to Eurostat[82] and the ECB (for MT,CY and SK). To adjust for 2009, a discount rate of 4% is used as indicated in the Impact Assessment Guidelines. We calculate missing values using the relative number of taxable persons according to our estimation of the number of taxable persons in 2009. This gives the following results:

Cost of tax functions in EUR, interpolated using the relative number of taxable persons, inflated for 2009	Aggregate administrative costs	IT cost
AT	431.991.040	70.844.800
BE	1.238.540.160	132.820.480
BG	71.339.810	276.511
CY	314.367.247	184.802
CZ	280.707.259	40.107.158
DE	7.373.267.200	390.457.600
DK	721.637.667	125.281.293
EE	40.784.835	6.389.376
EL	1.842.898.452	161.680.187
ES	1.430.956.800	74.630.400
FI	388.727.040	83.066.880
FR	4.881.260.800	445.619.200
HU	427.008.020	49.932.181
IE	484.881.280	57.216.640
IT	4.946.048.640	194.904.320
LT	78.181.021	6.858.936
LU	87.825.920	5.590.749
LV	80.335.952	24.718.754
MT	22.171.162	25.195
NL	2.419.539.200	747.385.600
PL	931.038.719	229.456.371
PT	502.295.040	67.383.680
RO	338.492.513	55.411.223
SE	685.668.523	137.040.162
SI	99.518.016	7.376.512
SK	11.434.960	1.608.434
UK	7.543.730.894	188.984.758
EU-27	**37.674.648.169**	**3.305.252.201**

Table 17 – Cost of tax functions in EUR inflated for 2009

[82] Eurostat, Exchange rates, http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tec00033&plugin=1.

268. For the purposes of this quantitative assessment, this information is only useful if we are able to derive the share of VAT collection costs from the cost of tax functions.

269. To estimate the share of VAT in the total cost of tax functions, we found data on VAT collection costs in the United Kingdom. This data, provided by the Financial Secretary to the Treasury[83] (2009), shows that the cost of VAT collection amounts to 0,62 pence per pound collected.

A	UK VAT revenue in EUR (calculated as a % of GDP 2008, Taxation Trends 2010)	122.447.423.700
B	Percentage cost of UK VAT collection 2008-2009 per EUR collected	0,62%
C	UK VAT collection costs in EUR (A*B)	759.174.027
D	UK Cost of Administration for Tax Functions in the UK in EUR (2009)	7.543.730.894
	Estimated share of VAT collection costs in the total cost of tax functions in the UK (C/D)	10%

Table 18 – Estimated share of VAT in the total cost of tax functions in the UK

270. If we calculate the same percentage based on the data in the Reckon Report, we obtain a percentage for VAT collection costs of 11% in the UK. Applied to the estimated costs of tax administration and IT in 2009 and divided by the number of taxable persons in the UK in 2009 this amounts to:

(All amounts are in EUR)	
Aggregated administrative costs for tax functions in the UK (2009)	7.543.730.894
IT costs for tax functions in the UK (2009)	188.984.758
Estimated share of VAT collection costs	11%
Estimated aggregate VAT collection costs in the UK	829.810.398
Estimated VAT collection costs for IT in the UK	20.788.323
Total number of taxable persons in the UK (2009)	1.946.688
Rough estimations in EUR for the United Kingdom only	
Cost of VAT collection per Taxable Person	426
IT cost of VAT collection per Taxable Person	11

Table 19 – Administrative and IT costs for VAT collection per taxable person in the UK

271. For now, we do not have more-detailed information on the costs of VAT collection from a tax authority's perspective for other Member States. As it is likely that the cost structure of tax functions in the Member States is very diverse, we do not recommend using the data calculated for the UK on an EU-27 scale. A more-

[83] HM Revenue & Customs, Departmental Autumn Performance Report 2009. http://www.hmrc.gov.uk/about/reports.htm

detailed analysis is needed in order to make reliable estimates and to calculate the indirect effects on the costs of VAT collection.

7 The assessment per model

7.1 Structure of the assessment

272. For each model, the following topics are addressed:

- description and scope;
- step-by-step flowchart;
- process description;
- roles and responsibilities;
- sustainability of the model under different scenarios;
- reporting obligations and pre-filled VAT return;
- cash-flow impact;
- mandatory and optional character;
- best practices;
- quantitative assessment;

All models use the same cost drivers. A summary of these cost drivers is given on the next page.

Member States	Estimated number of taxable persons in 2009	Estimated number of taxable persons in 2038	Theoretical VAT liability in 2006 (Reckon Report)	The total amount of VAT collected (Reckon Report)	The VAT Gap (Reckon Report)	Vat Gap as a share of theoretical liability (Reckon Report)	VAT liability adjusted for 2009	VAT collected adjusted for 2009	VAT Gap in 2009	Estimated aggregate administrative costs for tax functions in 2009	Estimated costs of IT for tax administrations in 2009
AT	797.886	1.185.619	22.844.000.000	19.735.000.000	3.109.000.000	14%	25.056.892.210	21.646.724.206	3.410.168.004	431.991.040	70.844.800
BE	763.831	1.135.015	25.360.000.000	22.569.000.000	2.791.000.000	11%	27.816.616.462	24.755.253.033	3.061.363.428	1.238.540.160	132.820.480
BG	172.796	421.978	N/A	N/A	N/A	N/A	2.404.458.865	2.060.958.513	343.500.352	71.339.810	276.511
CY	72.928	108.367	N/A	N/A	N/A	N/A	1.491.839.722	1.278.715.897	213.123.825	314.367.247	184.802
CZ	720.894	1.760.470	9.216.000.000	7.541.000.000	1.675.000.000	18%	10.108.751.471	8.271.494.666	1.837.256.805	280.707.259	40.107.158
DE	5.736.142	8.523.625	164.115.000.000	147.150.000.000	16.965.000.000	10%	180.012.776.444	161.404.381.402	18.608.395.042	7.373.267.200	390.457.600
DK	328.749	488.505	23.611.000.000	22.560.000.000	1.051.000.000	4%	25.898.191.296	24.745.381.206	1.152.810.091	721.637.667	125.281.293
EE	64.432	157.347	1.325.000.000	1.215.000.000	110.000.000	8%	1.453.352.398	1.332.696.727	120.655.671	40.784.835	6.098.551
EL	1.665.268	4.066.688	21.746.000.000	15.183.000.000	6.563.000.000	30%	23.852.529.242	16.653.773.176	7.198.756.066	1.795.514.371	157.619.220
ES	3.659.284	8.936.202	63.013.000.000	61.595.000.000	1.418.000.000	2%	69.117.052.567	67.561.691.284	1.555.361.283	1.430.956.800	74.630.400
FI	569.877	846.809	15.176.000.000	14.418.000.000	758.000.000	5%	16.646.095.088	15.814.667.829	831.427.259	388.727.040	83.066.880
FR	4.010.706	5.959.712	140.817.000.000	131.017.000.000	9.800.000.000	7%	154.457.905.375	143.708.581.978	10.749.323.396	4.881.260.800	445.619.200
HU	570.723	1.393.740	8.882.000.000	6.813.000.000	2.069.000.000	23%	9.742.396.980	7.472.973.500	2.269.423.480	427.008.020	49.932.181
IE	296.392	723.808	14.043.000.000	13.802.000.000	241.000.000	2%	15.403.341.679	15.138.996.073	264.345.606	484.881.280	57.216.640
IT	5.847.559	8.689.185	119.197.000.000	92.860.000.000	26.337.000.000	22%	130.743.581.719	101.855.323.527	28.888.258.192	4.946.048.640	194.904.320
LT	70.650	172.532	2.335.000.000	1.826.000.000	509.000.000	22%	2.561.190.830	2.002.884.135	558.306.695	76.175.797	6.687.092
LU	57.589	140.636	1.961.000.000	1.941.000.000	20.000.000	1%	2.150.961.549	2.129.024.154	21.937.395	87.825.920	5.450.855
LV	83.390	203.644	1.751.000.000	1.374.000.000	377.000.000	22%	1.920.618.905	1.507.099.015	413.519.890	80.335.952	24.718.754
MT	55.630	135.852	463.000.000	410.000.000	53.000.000	11%	507.850.687	449.716.591	58.134.096	22.171.162	25.195
NL	1.453.000	3.548.317	41.269.000.000	39.888.000.000	1.381.000.000	3%	45.266.717.065	43.751.939.962	1.514.777.103	2.419.539.200	747.385.600
PL	2.363.500	5.771.815	23.784.000.000	22.127.000.000	1.657.000.000	7%	26.087.949.761	24.270.436.611	1.817.513.150	931.038.719	223.707.569
PT	1.576.285	2.342.282	14.371.000.000	13.757.000.000	614.000.000	4%	15.763.114.952	15.089.636.935	673.478.017	502.295.040	67.383.680
RO	720.894	1.760.470	N/A	N/A	N/A	N/A	8.896.770.636	7.625.780.357	1.270.990.279	338.492.513	68.233.365
SE	1.010.567	1.501.653	29.294.000.000	28.487.000.000	807.000.000	3%	32.131.701.996	31.246.528.121	885.173.876	685.668.523	137.040.162
SI	92.699	226.376	2.764.000.000	2.647.000.000	117.000.000	4%	3.031.747.946	2.903.414.187	128.333.759	99.518.016	7.376.512
SK	187.564	458.042	4.632.000.000	3.320.000.000	1.312.000.000	28%	5.080.700.609	3.641.607.518	1.439.093.091	11.434.960	1.608.434
UK	1.946.688	2.892.682	155.697.000.000	128.721.000.000	26.976.000.000	17%	170.779.327.021	141.190.169.068	29.589.157.952	7.543.730.894	184.255.912
EU-27	**34.895.924**	**63.551.372**	**907.666.000.000**	**800.956.000.000**	**106.710.000.000**		**1.008.384.433.473**	**889.509.849.671**	**118.874.583.802**	**37.625.258.865**	**3.302.933.167**

Table 20 – Overview of the main cost drivers and cost data

7.2 The split payment model – Automated or manual split payment – Blocked VAT bank account at the level of the tax authority's bank

7.2.1 Description and scope

273. In this model, the tax authority's bank plays the role of the VAT collector and pays the VAT to the tax authority. For this purpose, every taxable person needs to have a blocked VAT bank account at the tax authority's bank in which VAT received is kept. However, the blocked VAT bank account is opened in the name of the taxable person and the funds in the blocked VAT bank account continue to be owned by the taxable person.

274. A taxable person is still responsible for charging the correct amount of VAT on an invoice. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

275. The taxable person instructs his bank to pay the price of the goods or services purchased and any VAT due. The payment is split into the taxable amount and the VAT. Blocked VAT bank accounts are created for each taxable person, into which the VAT is placed on a real-time basis at the time of payment in respect of the transaction. The split between the taxable amount and the VAT amount can be done either manually or automatically. In the case of a manual split, it is up to the taxable person to generate two separate payment instructions and to manage the balance of the blocked VAT bank account. This process can also be automated, either at the level of the banking software of the taxable person or at the level of the automated clearing house. In the latter case, the payment request must contain sufficient data to allow the split to be made. The automated clearing house needs to have the account number of the blocked VAT bank account of both parties involved and the VAT percentage applied.

276. At the time of this payment, the tax authority is informed of the payment. This allows the tax authority to keep track of the VAT status of all taxable persons in the system on a real-time basis. For this purpose, the tax authority keeps VAT current accounts, which are credited when the taxable person pays VAT and debited when the taxable person receives VAT in his blocked VAT bank account. There is a difference between the VAT current account (which is an analytical account reflecting the debit or credit position of the taxable person with regard to VAT) and the blocked VAT bank account (which is a real bank account that can only contain positive cash amounts).

277. If the taxable person wants to purchase goods or services from a supplier, he makes one payment request (in the case of an automated split payment) or two payment requests (in the case of a manual split payment). Depending on the taxable person's payment request (i.e. the amount of VAT due) and the status of his blocked VAT bank account at the tax authority's bank level, he can use the VAT credit in his blocked VAT bank account or the funds in his *"regular"* bank account to

fulfil his obligation to pay the VAT due that is charged on the invoice he receives from his supplier. It is important to note that, in principle, funds in a blocked VAT bank account can only be used for payments of VAT due.

278. Each VAT period, the taxable person and the tax authority settle the total VAT that is payable or to be refunded.

279. Based on the experience in Azerbaijan in section 7.2.9, the preferred scope of this model is B2B. The scope should not be limited to B2B transactions between parties who are established in the Member State that implements the model. The scope can be made applicable to suppliers that are not established, but are registered for VAT purposes, in the Member State that implements the model, and possibly even to customers that are not established in the Member State that implements the model. Taxable persons who are liable to pay the VAT to the tax authority, however, have to open a blocked VAT bank account with the tax authority's bank in the relevant Member State.

280. Although there may be more practical barriers, B2C transactions could be included in the scope of this model. In principle, B2C customers should have the possibility to pay the VAT amount into the supplier's blocked VAT bank account. In this case, B2C customers are assured that the VAT amount they have paid has gone to the tax authority.

281. However, the scope cannot be extended to cash payments. Reliable figures on the use of cash in Europe are scarce. In its 2005 study on the costs, advantages and disadvantages of payment instruments, the Belgian National Bank concluded that 89% of all payments of less than EUR 20 are made in cash and that this percentage decreases with the amount of the transaction to 39% for payments of over EUR 100.[84] On the basis of these figures, we can conclude that the proportion of cash payments is still significant in Europe. However, it is gradually decreasing. From the World Payments Report 2009, we know that the use of non-cash payment instruments is growing faster than GDP (Compound Annual Growth Rate of 6% over the 2001-2007 period), which allows us to conclude that the use of cash is decreasing throughout Europe.[85]

[84] National Bank of Belgium, Costs, advantages and disadvantages of different instruments of payment, December 2005, http://www.nbb.be/doc/ts/Publications/Brochures/Betaalmiddelen.pdf.
[85] Capgemini, The Royal Bank of Scotland (RBS) and the European Financial Management & Marketing Association (Efma), The World Payments Report 2009, http://www.at.capgemini.com/m/at/tl/World_Payments_Report_2009.pdf.

7.2.2 Step-by-step flowchart[86]

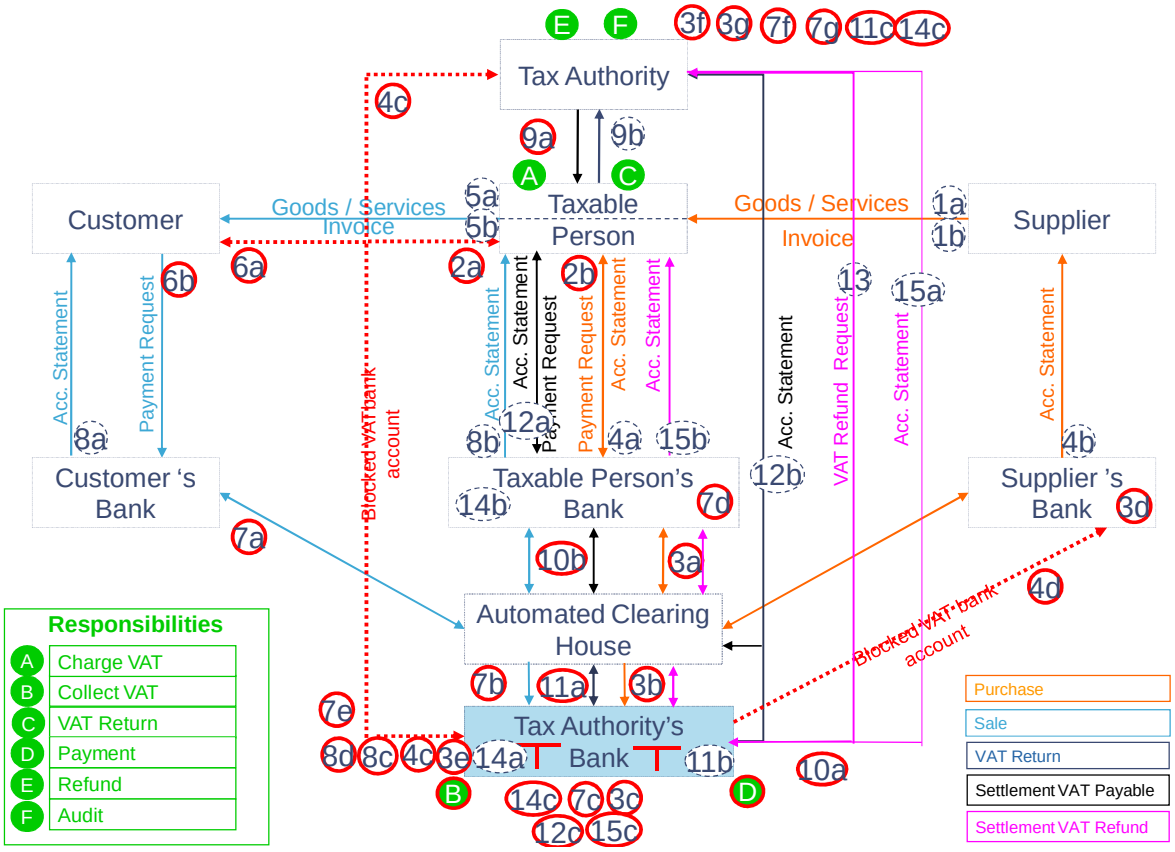


Figure 20 – The split payment model – Automated or manual split payment – Blocked VAT bank account at the level of the tax authority's bank

7.2.3 Process description[87]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme, a *"Taxable Person"* purchases goods or services from a *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2a	*When the Taxable Person wants to pay for the goods or services, he verifies the balance of Taxable Person's blocked VAT bank account at Tax Authority's Bank.*
Step 2b	*On the basis of this information, Taxable Person will generate the*

[86] Please note that the bold red circles are the new steps compared to the current VAT model.
[87] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

	following payment requests: *1. A payment request to pay the amount for the goods or services from his bank account to Supplier's bank account.* *2. A payment request for the VAT amount.* *a. If the balance is insufficient, it will generate a request to debit his bank account and credit his blocked VAT bank account to make up for the deficit.* *b. If the balance in the blocked VAT bank account is sufficient, it will generate a request to debit Taxable Person's blocked VAT bank account and credit Supplier's blocked VAT bank account.* *This decision logic and generation of the corresponding payment requests can be embedded in the banking software.* *The payment request includes additional "enriched" data regarding the VAT treatment of the transaction.*
Step 3a	Taxable Person's Bank debits Taxable Person's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House.
Step 3b	Tax Authority's Bank verifies whether the VAT has been debited from the Taxable Person's bank account. If not, Tax Authority's Bank debits the Taxable Person's blocked VAT bank account with the VAT amount due.
Step 3c	Supplier's blocked VAT bank account is credited with the VAT amount.
Step 3d	Supplier's bank account is credited with the taxable amount.
Step 3e	Tax Authority's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Taxable Person and Supplier in a VAT current account on a real-time basis.
Step 3f	The VAT current account of Taxable Person at Tax Authority's level is credited with the VAT amount.
Step 3g	The VAT current account of Supplier at Tax Authority's level is debited with the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
Step 4c	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 4d	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Supplier and Tax Authority.
B) Sale transaction	

Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6a	Customer verifies the status of his blocked VAT bank account at Tax Authority's Bank to determine whether he has to pay the total amount (taxable amount and VAT amount) or whether he can only pay the taxable amount and use the balance of his blocked VAT bank account to pay the VAT amount.
Step 6b	Customer makes a payment request to Customer's bank for the relevant amount. The payment request includes additional *"enriched"* data regarding the VAT treatment of the transaction (including whether to debit the blocked VAT bank account).
Step 7a	Customer's Bank debits Customer's bank account with the relevant amount, including VAT if not paid from the blocked VAT bank account, and provides payment information to Automated Clearing House.
Step 7b	Tax Authority's Bank verifies whether the VAT has been debited from Customer's bank account. If not, Tax Authority's Bank debits Customer's blocked VAT bank account with the VAT amount due.
Step 7c	Taxable Person's blocked VAT bank account is credited with the VAT amount.
Step 7d	Taxable Person's bank account is credited with the taxable amount.
Step 7e	Tax Authority's Bank passes the VAT information for this transaction to Tax Authority, allowing it to track the VAT status of both Customer and Taxable Person in a VAT current account on a real-time basis.
Step 7f	The VAT current account of Customer at Tax Authority's level is credited with the VAT amount.
Step 7g	The VAT current account of Taxable Person at Tax Authority's level is debited with the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
Step 8c	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Taxable Person and Tax Authority.
Step 8d	Tax Authority's Bank makes an account statement of the blocked VAT bank account available to Customer and Tax Authority.
C) Reporting through VAT return	
Step 9a	At the end of the taxable period, Tax Authority provides Taxable Person with an overview of all transactions booked in his VAT current account (pre-filled VAT return).
Step 9b	At the end of the taxable period, Taxable Person has to prepare a VAT return stating the net VAT balance and subsequently file this VAT return with Tax Authority.

Settlement of VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10a	Tax Authority makes a VAT balance payment request to Tax Authority's Bank to transfer the VAT balance due as reported in the VAT return into Tax Authority's bank account.
Step 10b	If the balance in the blocked VAT bank account is not sufficient, Tax Authority's Bank issues a direct debit instruction for the difference to Taxable Person's Bank. Taxable Person's Bank executes the direct debit instruction, and the blocked VAT bank account is credited with the difference.
Step 11a	Upon execution of the VAT balance payment request, the blocked VAT bank account of Taxable Person at Tax Authority's Bank is debited with the VAT balance due.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 11c	Taxable Person's VAT current account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
Step 12c	Tax Authority's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a VAT balance refund request to Tax Authority's Bank to transfer the refundable VAT balance as reported in the VAT return to Taxable Person's bank account.
Step 14a	Tax Authority's bank account is debited with the refundable VAT balance.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 14c	Taxable Person's VAT current account is debited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
Step 15c	Tax Authority's Bank makes an account statement available for the blocked VAT bank account of Taxable Person.
F) Auditing	

Auditing by the tax Authority can partially be done in real time when the payment takes place. This is because Tax Authority can monitor movements in the blocked VAT bank accounts.

Even though all outgoing payments from the blocked VAT bank account system are monitored or triggered by Tax Authority, Taxable Person can still be subject to individual audits.

7.2.4 Roles and responsibilities

a) Definition of the roles and responsibilities grid

282. Below, in the roles and responsibilities grid (referred to as RIL grid), we define the following:

- **Role:** the task to be performed;
- **Responsible:** the stakeholder who has to perform the task;
- **Informed:** the stakeholder who is kept up to date on the task;
- **Liable:** the stakeholder who will be held accountable in accordance with the VAT legislation for ensuring that the task is performed and who may incur penalties if the task is not performed.

283. Please note that the responsibility shifts and the role changes versus the current VAT model are shaded in the grid.

b) RIL grid for automated split payment[88,89]

	Role	***Taxable Person***	***Tax Authority***	***Taxable Person's Bank***	***Tax Authority' s Bank***	***Automated Clearing House***
A & B	Charge VAT	Responsible Liable				
	Split taxable amount and VAT	Informed		Responsible Liable		Responsible[90] Liable
	Collect VAT	Liable	Informed		Responsible	
C	Prepare	Informed	Responsib			

[88] Please note that the blue boxes are the new roles and responsibilities compared to the current VAT model.
[89] Please note that the first column matches with the headings of the process description.
[90] Depending on whether the automated split payment occurs at the level of the taxable person's bank or at the level of the automated clearing house.

	Role	Taxable Person	Tax Authority	Taxable Person's Bank	Tax Authority's Bank	Automated Clearing House
	overview of payments or pre-filled VAT return[91]		le			
	Prepare and file VAT return	Responsible Liable	Informed			
D	Settlement of VAT payable	Liable Informed	Responsible			
E	Settlement of VAT refund	Informed	Responsible Liable			
F	Audit	Informed	Responsible			

Table 21 – RIL grid for automated split payment

c) RIL grid for manual split payment[92,93]

	Role	Taxable Person	Tax Authority	Taxable Person's Bank	Tax Authority's Bank	Automated Clearing House
A & B	Charge VAT	Responsible Liable				N/A
	Split taxable amount and VAT	Responsible Liable		(Liable)		N/A
	Collect VAT	Liable	Informed		Responsible	N/A
C	Prepare overview of payments or pre-filled	Informed	Responsible			N/A

[92] Please note that the blue boxes are the new roles and responsibilities compared to the current VAT model.
[93] Please note that the first column matches with the headings of the process description.

	Role	Taxable Person	Tax Authority	Taxable Person's Bank	Tax Authority's Bank	Automated Clearing House
	VAT return					
	Prepare and file VAT return	Responsible Liable	Informed			N/A
D	Settlement of VAT payable	Liable Informed	Responsible			N/A
E	Settlement of VAT refund	Informed	Responsible Liable			N/A
F	Audit	Informed	Responsible			N/A

Table 22 – RIL grid for manual split payment

7.2.5 Sustainability of the model under different scenarios

284. We have identified a non-exhaustive list of scenarios to test the sustainability of the split payment model. These scenarios deal with special technical VAT situations, in which the limitations of the model are tested. We identified that the model can be used under all of the scenarios mentioned below. There is, however, one scenario that will cause a technical challenge, i.e. B2B supplies by retailers, where there is an immediate payment upon delivery of the goods in cash or by payment card.

285. Please see below for an explanation for each of the scenarios.

Supplies subject to local VAT to a taxable person established outside the EU and not registered in the country of supply

286. In the case that a taxable person performs a supply of goods or services subject to local VAT for a taxable person established outside the EU who is not registered for VAT in the Member State where the supply takes place, the latter should make a payment of the taxable amount into the taxable person's bank account and of the VAT amount into the taxable person's blocked VAT bank account.

287. From a practical viewpoint, it is not impossible to require this of the customer. It may be required to set up an information campaign to inform non-EU taxable persons of this change and to ensure that non-EU taxable persons know that, if their suppliers request payment of VAT into a *"regular"* bank account (not a blocked

VAT account), they are not acting in good faith. Moreover, it could be required to set up an information campaign to inform non-EU financial institutions.

288. As a benefit for taxable persons established outside the EU who are not registered for VAT, a significant reduction may be provided for as regards proof of the taxable transactions when filing a 13th Directive refund claim. This is because proof of payment into the blocked VAT bank account of the taxable person provides sufficient proof to the tax authority that VAT has been paid and is *"locked"* in a blocked VAT bank account. Moreover, the taxable person established outside of the EU will receive a quicker refund if VAT is paid into the blocked VAT bank account of his supplier.

Supplies subject to local VAT to a taxable person established in another Member State and not registered in the country of supply

289. In the case that a taxable person performs a supply of goods or services subject to local VAT for a taxable person established in another Member State who is not registered for VAT in the Member State where the supply takes place, the latter should make payment of the taxable amount into the taxable person's bank account and of the VAT amount into the taxable person's blocked VAT bank account.

290. From a practical viewpoint, it is not impossible to require this of the customer. If the split payment is applicable in all Member States in a harmonised way (applying the same system and rules), there will be less need to set up an information campaign, because customers will be informed in the Member State in which they are established. If the split payment is optional for Member States, and therefore not applicable in all Member States, it may nonetheless be required to set up an information campaign to inform taxable persons established in other Member States of this change and to ensure that they know that, if their suppliers request payment of VAT, these suppliers are not acting in good faith. In this case, too, it could be required to set up an information campaign to inform financial institutions.

291. As a benefit for non-VAT-registered taxable persons established in another Member State, a significant reduction may be provided for as regards proof of taxable transactions when filing a VAT refund claim. This is because proof of payment into the taxable person's blocked VAT bank account provides sufficient proof to the tax authority that VAT has been paid and is *"locked"* in a blocked VAT bank account. Moreover, the taxable person established in another Member State receives a quicker refund if VAT is paid into the blocked VAT bank account of his supplier.

Supplies to taxable persons that require another invoice format

292. We have not identified any specific issues regarding supplies to taxable persons that require a different invoice format.

Cross-border supplies

293. If no local VAT is charged by the supplier (e.g. if the reverse charge is applied), there will be no VAT payment. In this case, we have not identified any change compared to the current VAT model. Cross-border supplies where local VAT is charged are covered in the first two scenarios.

Importation of goods

294. If a taxable person imports goods, VAT has to be paid to the customs authority at the time the goods are imported (unless a deferment of payment of import VAT can be applied). Subsequently, the customs authority has to transfer the VAT to the taxable person's blocked VAT bank account. It is also technically possible to allow or defer the payment of import VAT to the VAT return (i.e. no VAT is paid at the time of importation), as is currently the case in several Member States. In that case, there is no payment to the customs authority and no VAT is paid into the blocked VAT bank account.

Credit notes and "self-invoices"

295. We have not identified any operational issues with regard to issuing credit notes. This could follow the same process as *"regular"* invoices.

296. The same can be said for *"self-invoices"* (e.g. an invoice for a deemed supply of goods or services in accordance with articles 17, 18 and 26 of the VAT Directive). However, as there is no counter-party, there is a higher likelihood of no *"self-invoice"* being issued. Furthermore, as there is no payment to a supplier, no VAT is paid into a blocked VAT bank account. However, the invoice should be reported in the VAT return and VAT should be included in the balance stated in the VAT return. Consequently, this model does not impact the *"self-invoicing"* mechanism.

Taxable persons with a limited right to deduct VAT or invoices received on which VAT cannot be deducted

297. If a pre-filled VAT return has been provided, it is likely that taxable persons with a limited right to deduct VAT or even with a 100% right to deduct VAT will also have to make amendments to their VAT return (e.g. not deduct VAT on certain invoices that relate to private use).

Bad debts

298. We have not identified any issues regarding bad debts. In this scenario, if a customer does not pay for goods supplied or services rendered, the supplier will still have to report the transaction in his VAT return and pay additional VAT due

when he files the VAT return. On the basis of the standard bad debt rules, the supplier is able to reclaim the unpaid VAT due via his VAT return. If a customer ultimately pays (part of) the VAT amount due, that is done into the blocked VAT bank account.

299. In the case of bad debts, we have identified a benefit for the tax authority. The tax authority can monitor the request for a VAT refund due to bad debts as the tax authority is able to reconcile the amount of VAT paid by the taxable person to his supplier and the request for refund.

Partial payment

300. If a customer only pays part of the invoice, there should be a provision in the VAT legislation that a proportional amount of VAT needs to be paid by the customer into the blocked VAT account of the taxable person. If this has not been provided for, parties could agree that, in the case of partial payments, the payment is first allocated to the taxable amount and not to the VAT amount.

Payments in cash

301. This model does not support split payments in the case that the supply is paid in cash. As mentioned in section 7.2.1, the proportion of cash transactions is still significant in Europe. However, it is gradually decreasing.

Payments with payment cards

302. We see a practical issue for B2B transactions paid with payment cards. Even if the model were only applicable in B2B situations, if a payment is made by means of a payment card, it will difficult to make the split payment. The reason is that the payment card is currently linked to one bank account (at the issuing bank) whereas, in this model, it should be linked to two bank accounts (the *"regular"* bank account of the customer and the blocked VAT bank account of the customer). Furthermore, the terminal that reads the payment card is also usually linked to one bank account (held with the acquiring bank) whereas, in this model, it should be linked to two bank accounts (the *"regular"* bank account of the taxable person and the blocked VAT bank account of the taxable person). It needs to be further investigated whether it would be feasible in practice to make the necessary changes to allow for an automated split payment. However, practical experience has shown that significant costs may be involved in resolving this issue.

VAT grouping

303. We have not identified any specific issues regarding transactions made within or with VAT groups.

7.2.6 Reporting obligations and pre-filled VAT return

304. The reporting obligations of taxable persons remain the same as under the current VAT collection model.

305. The tax authority can provide the taxable person with a pre-filled VAT return on the basis of the payment flows and the booking entries in the VAT current account. However, it is likely that a large number of taxable persons will still need to amend their VAT returns significantly as the tax point is not generally the time of payment of VAT but the time the supply of goods or services is made or the time the invoice is issued. The fact of receiving a pre-filled VAT return may have a behavioural effect. Taxable persons will be informed of the data in the possession of the tax authority and have to explicitly challenge this data. Wrongful non-amendment of the VAT return can be an indication of fraud.

306. If the tax point is shifted to the time of payment, the cash-flow impact could be reduced. Taxable persons would then have to pay VAT at the time customers paid the invoice, but they would also only be entitled to deduct VAT at the time VAT was paid to the supplier. Additionally, the pre-filled VAT return would better reflect reality.

7.2.7 Cash-flow impact

307. Experience in Azerbaijan has shown that taxable persons perceive a cash-flow impact related to the refund of VAT in the case that the VAT return shows an amount of VAT to be refunded (see section 7.2.3, steps 13 -15c). However, it should be noted that this issue is no different under the current VAT collection model, where it may take a long time for the tax authority to effectively pay a refund. Where the time of effectively paying a refund would as part of this model be reduced, this would provide additional benefits to the taxable persons.

308. Clearly, there is no impact on the VAT a taxable person needs to pay to his supplier. This is because, instead of paying the VAT into the bank account of his supplier, he pays the VAT into a blocked VAT bank account. From a cash-flow perspective, this is a cash out and will remain a cash out.

309. In the examples below, we calculate the cash-flow impact of this model. The date of filing the VAT return is set as the end of the calendar month following that in which the transaction takes place. Clearly, each Member State has a different deadline and period for filing VAT returns. However, this date is a reasonable estimate to measure the cash-flow impact at a high level.

a) Average Days' Sales Outstanding (DSO) and Days' Payables Outstanding (DPO)

310. The calculations below take into account a DSO ratio (time between sale and payment for a seller) of 71,5 days and a DPO ratio (time between purchase and payment for a purchaser) of 35,2 days. This is the average in the service sector in a pool of European countries in 2008.[94]

311. Under the current VAT model, the taxable person can, in this example, deduct the VAT on the purchase made via the VAT return on 31 March 2010 whereas he has to pay the VAT to his supplier on 22 March 2010, thus leading to a cash-flow cost of 9 days. The taxable person should, on the other hand, already pay the VAT on sales made via the VAT return on 31 March 2010 whereas he does not receive payment from the customer until 28 April 2010, thus leading to a cash-flow cost of 28 days.

312. In this example, nothing changes under the automated or manual split payment model. If the tax point is not changed, the automated or manual split payment model only has an impact on payments (cash inflow) relating to sales. However, as the taxable person has to pay the VAT to the tax authority prior to receiving payment from his customer, he still incurs a cash-flow cost (similar to that in the current VAT model). VAT payments received, after the VAT return is filed, with regard to sales can subsequently be used to pay VAT on purchases once payment is received. But, since the taxable person could not use the VAT on sales as working capital in any case (because he has to pay the VAT to the tax authority prior to receiving any payment from the customer), imposing an obligation to pay VAT into a blocked VAT bank account does not seem to have an immediate cash-flow impact.

[94] PricewaterhouseCoopers, European Working Capital Study 2009, Working capital as a lever of profitability, p. 35.

	Date	VAT treatment	Supplier/Customer		VAT return				Days' VAT per flow	VAT position: - = refund + = payable	VAT finance cost = - VAT finance profit = +
			Payment	Collection	Payable	Recoverable	Filing date	Payment date			
Purchase	15/02/2010	Input local VAT	22/03/2010	-	-	100.000	31/03/2010	-	-9		-99
Sale	15/02/2010	Output local VAT	-	28/04/2010	300.000	-	31/03/2010	31/03/2010	-28		-924
Summary					300.000	100.000	31/03/2010	31/03/2010		200.000	-1.023
										Financing cost	0,011%

Figure 21 – Current VAT model – Average DSO and DPO

	Date	VAT treatment	Supplier/Customer		VAT return				Days' VAT per flow	VAT position: - = refund + = payable	VAT finance cost = - VAT finance profit = +
			Payment	Collection	Payable	Recoverable	Filing date	Payment date			
Purchase	15/02/2010	Input local VAT	22/03/2010	-	-	100.000	31/03/2010	-	-9		-99
Sale	15/02/2010	Output local VAT	-	28/04/2010	300.000	-	31/03/2010	31/03/2010	-28		-924
Summary					300.000	100.000	31/03/2010	31/03/2010		200.000	-1.023
										Financing cost	0,011%

Figure 22 – The split payment model – Automated or manual split payment – Average DSO and DPO

313. In both situations, the taxable person has a cash-flow cost of EUR 1.023. As mentioned above, the cash-flow cost is the same for the current VAT model and the automated or manual split payment model because the taxable person cannot use VAT on sales as working capital.

b) Taxable person with short DSO

314. We have identified that there is a negative cash-flow impact for taxable persons who collect VAT on sales earlier than they have to pass the VAT to the tax authority (because they have negotiated good payment terms with their customers). The calculations below take into account a short DSO ratio of 20,1 days and a DPO ratio of 33,8 days. This is the average in the retail sector in a pool of European countries in 2008.[95]

	Date	VAT treatment	Supplier/Customer		VAT return				Days' VAT per flow	VAT position: - = refund + = payable	VAT finance cost = - VAT finance profit = +
			Payment	Collection	Payable	Recoverable	Filing date	Payment date			
Purchase	15/02/2010	Input local VAT	20/03/2010	-	-	100.000	31/03/2010	-	-11		-121
Sale	15/02/2010	Output local VAT	-	07/03/2010	300.000	-	31/03/2010	31/03/2010	24		792
Summary					300.000	100.000	31/03/2010	31/03/2010		200.000	671
										Financing cost	0,011%

Figure 23 – Current VAT model – Taxable person with short DSO

[95] PricewaterhouseCoopers, European Working Capital Study 2009, Working capital as a lever of profitability, p. 34.

315. Under the current VAT model, taxable persons with a short DSO are able to use VAT as working capital (in our example 24 days). At a 0,011% daily rate and also taking into account the cash-flow cost of the purchases, this means a cash-flow gain of EUR 671.

316. Under the automated or manual split payment model, the gain relating to the DSO (in our example 24 days) will be lost if the VAT is paid into a blocked VAT bank account, unless the taxable person receives interest on the VAT paid in the blocked VAT bank account. This is because the taxable person cannot use the VAT paid by his customers for any other means than to pay VAT to his suppliers. However, due to the fact that less VAT is deductible than is payable, the taxable person cannot use the difference (which is *"locked"* in the blocked VAT bank account) for other purposes and will thus need to increase his working capital.

317. It should be further investigated how interest rates applicable to the blocked VAT bank account are determined and who is entitled to the interest payment, as this may influence business decisions.

	Date	VAT treatment	Supplier/Customer		VAT return				Days' VAT per flow	VAT position: - = refund + = payable	VAT finance cost = - VAT finance profit = +
			Payment	Collection	Payable	Recoverable	Filing date	Payment date			
Purchase	15/02/2010	Input local VAT	20/03/2010	-	-	100.000	31/03/2010	-	-11		-121
Sale	15/02/2010	Output local VAT	-	07/03/2010	300.000	-	31/03/2010	31/03/2010	0		0
Summary					300.000	100.000	31/03/2010	31/03/2010		200.000	-121
										Financing cost	0,011%

Figure 24 – The split payment model – Automated or manual split payment – Taxable person with short DSO

318. Based on this high-level cash-flow-impact assessment, clearly, for certain taxable persons, the automated or manual split payment model will not have a significant impact whereas, for others, it may have a significant impact. Furthermore, the transitional effects (i.e. when the current model shifts to the automated or manual split payment model) on the cash flow of taxable persons should still be investigated.

7.2.8 Mandatory or optional character

a) Mandatory or optional for the taxable person

319. The model could be made optional for customers, allowing them to choose whether to deposit the VAT amount in the bank account of the supplier or directly in the blocked VAT bank account of the supplier. In this respect, an incentive would be created for the customer as he can avoid to get involved in certain fraud mechanisms if the VAT amount were directly deposited in the blocked VAT bank account.

320. However, if the model were optional, it would have the following disadvantages:

a) **Lack of effectiveness:** The benefit of this model is that VAT collected cannot be freely used by the taxable person. The VAT is paid into a blocked VAT bank account which is under the strict control of the tax authority. However, if the model were made optional, it would significantly reduce the benefit envisaged. Furthermore, it is likely that fraudsters, which cause the VAT Gap, would not opt in and therefore would not use the split payment into a blocked VAT bank account.

b) **Increased complexity:** Both for the tax authority and for the taxable persons, it would be very difficult to manage different sets of data. A taxable person would have different master data for each supplier depending on whether he wants to pay into a blocked VAT bank account or into the regular bank account. The tax authority would have to perform more complex reconciliations to verify the amounts paid in the blocked VAT bank account, the amounts reported in the VAT return of both the supplier and the customer, and the positions reported in the VAT current account.

c) **Lack of economies of scale:** Both the taxable person and the tax authority would have to make a significant investment. If the model were not applied by all taxable persons, both the taxable person and the tax authority would miss out on any economies of scale (e.g. financial sector and software providers may not be interested in developing tools due to the limited market potential or will develop tools that are costly due to limited demand).

321. Consequently, in order to meet the objectives set, it is preferable that the model is mandatory for taxable persons (both customers and suppliers). In that regard, it is important to mention that, even though the model should be applied mandatorily for taxable persons, the scope of the model can vary depending on certain policy decisions (e.g. only applicable between taxable persons who both

have a VAT registration in the Member State where the supply takes place; only applicable if the taxable person has a VAT registration in the Member State where the supply of goods or services takes place). However, it is best practice to make the scope as broad-based as possible.

b) Mandatory or optional for the Member States

322. This model can be made optional or mandatory for the Member States. However, in order to increase efficiency, limit uncertainty, reduce complexity and benefit from economies of scale (see above), a mandatory harmonised model for all Member States seems to be the better option.

7.2.9 Best practices

Azerbaijan

323. In Azerbaijan, every registered person needs to have a VAT sub-registration bank account into which VAT due must be paid (in the case of non-cash transactions). A purchaser can pay VAT to the supplier from his own VAT sub-registration bank account on the basis of an electronic tax invoice. In order to do so, the customer needs to log on to www.e-taxes.gov.az and make a payment.

324. Taxable persons can obtain information on the operations carried out with regard to the sub-registration bank account and balance in real time via the above website.

325. According to PricewaterhouseCoopers Azerbaijan, the system works well in practice and no special issues are identified (except the long time it takes to obtain refunds, which is not related to the split payment model).

326. According to the Azerbaijan tax authority, VAT revenues have increased by approximately USD 551,1 million or 86,7 percent as compared to the same period of the previous year[96].

327. For further reference, we refer to the Cabinet of Ministers of Azerbaijan Decision no. 219 of 30 December 2007 and article 13.2.40 of the Tax Code.

[96] Intra-European Organisation of Tax Administrations, http://www.iota-tax.org/content/view/379/39/

7.2.10 Quantitative assessment

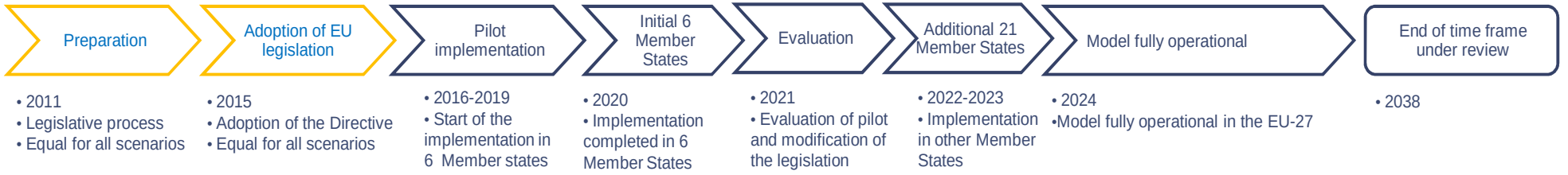
7.2.10.1 Timeline for the implementation and implementation scenarios

328. We assume the implementation of the split payment model will take approximately 4 years for the Member States who implement it first. This is longer than the implementation of the other models as it requires more investments in technology, and more stakeholders are involved. This implies that the split payment model will be operational in 6 Member States (scenario 1 and 3) and in all Member States (scenario 2) from 2020 if the new Directive is approved in 2015. The time frame is presented on the next page.

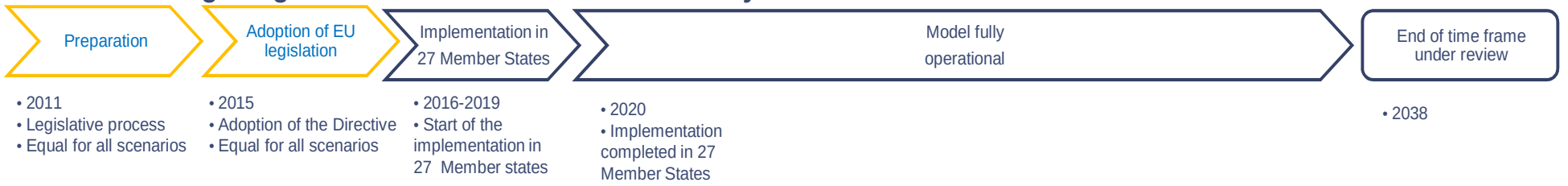
329. In scenario 1, an evaluation of the pilot will be performed and the practical details can be fine tuned or modified. The other 21 Member States will then start the implementation in 2022. For this second implementation, 2 years are calculated, as we assume lessons can be drawn from the pilots.

Implementation time frame split payment model

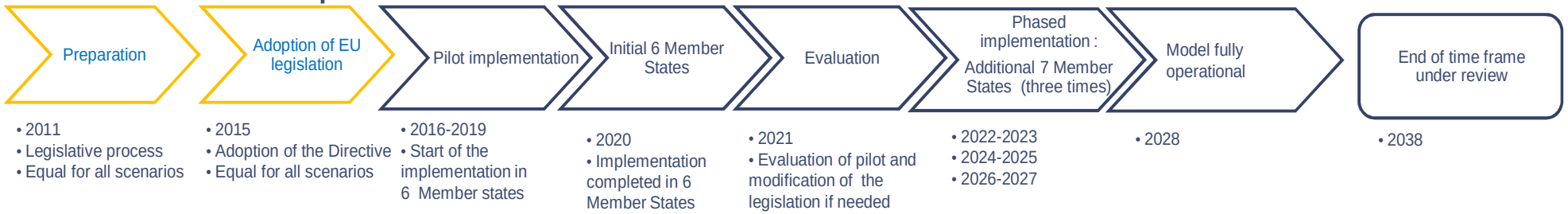
SCENARIO 1: 6 pilots + 21



SCENARIO 2: Big bang in 27 Member States simultaneously if needed



SCENARIO 3: Phased implementation in EU-27: 6+7+7+7



Implementation at European level

Implementation at the level of the Member states

Figure 25 – Implementation time frame split payment model

7.2.10.2 Specific assumptions for this model

330. Below, we make specific assumptions regarding the costs of the split payment model. In column 1 of the following table we identify the requirements of the model that will drive the costs. In order to quantify these requirements we first linked them to the step-by step flowchart, and then we made assumptions on comparable applications or cost drivers for the (combined) requirements. Based on the available data and by applying the Delphi-method[97] (where data is contradictory or missing) we make high level estimations on the investment and operational costs of the requirements of the model. As stated in section 6.2.3 we advise extreme caution in interpreting and analysing these cost estimations. For the general assumptions on the costs, we refer to section 6.

[97] The Delphi method is a systematic, interactive forecasting method which relies on a panel of experts. The Delphi technique, by definition, is a group process involving an interaction between the researcher and a group of identified experts on a specified topic, usually through a series of questionnaires.

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
A&B. Purchase and sale transaction					
Infrastructure to manage the VAT current accounts per taxable person. This current account contains data from the blocked VAT account and data from the VAT return the taxable person submits.	3e/f/g, 7e/f/g, 9a, 11c, 10a, 13, 14	The following cost drivers are applicable: - Number of current VAT accounts - Number of messages in/out per account - Size of the messages - Frequency of updates	Preliminary estimates for a system to manage payments for road pricing in The Netherlands: - Scope: taxable persons: 8 million and number of transfers per year: 12 million - Investment cost: 15 million EUR - Operational cost: 56 million EUR In these costs the collection cost is included (e.g. 30% of invoices is sent on paper). Hence, the operational cost for the split payment model will be considerably lower as no collection activity is needed. Source: Centraal Justitieel Incasso Bureau, Zo doen wij het! Een verkenning van de rol van het CJIB in kilometerbeprijzing, 2005). Issuing platform that clears financial transactions with payment cards - Scope: 90 million transactions/year - Operational cost: 6,5 million EUR Source: Data from PwC, 2010.	The cost of implementing infrastructure will be dependent on: - the maturity of the existing technology - the maturity and functionalities of the existing systems - the required level of integration with legacy systems - the required availability of the system These factors can be very different per Member State and can influence the minimal and maximal cost estimates.	Investment cost per tax authority Min: 5.000.000 — Max: 15.000.000 Operational cost per tax authority Min: 6.500.000 — Max: 11.200.000
Blocked VAT bank account for every taxable person.	Basic requirement of the model	Comparable to the cost for a bank of keeping a regular current bank account for a professional client	The price professional clients pay to commercial banks for having a bank account vary per financial institution and are approx. 90-100 EUR per year, this price probably also contains a margin for the bank. Source: price comparison of several European banks, 2010.	-Commercial banks already have platforms to hold current accounts. The investment cost of holding blocked VAT accounts will be negligible for such an institution. If the tax authority's bank is not a commercial bank it will need to make an initial investment in order to implement a banking application. - A blocked VAT account will drive considerably less costs then a current account (no cards, no negative cash positions, ...). - Holding these (simplified) accounts can be seen as an opportunity for commercial banks for which the potential benefits exceed the operational costs.	Investment cost per tax authority Min: 0 — Max: 10.000.000 Operational cost per taxable person Min: 0 — Max: 20

Table 23 – Assumptions on the investment and operational costs of the split payment model (part 1)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
Modified software for the banking software of taxable person (allow for an automated check on the balance of the blocked VAT bank account in the case of an automated split payment). This is not applicable for a manual split payment system.	2a/b, 3b, 6a/b, 7b	These requirements have been combined as they are linked to similar functional requirements. The cost of this integrated platform will be influenced by: - Availability of the system - Frequency of the flow of data - Interoperability requirements with current software - Number of additional elements that need to be added to the SEPA scheme - Number of automated checks - Number of banks - Number of taxable persons In order to make a high level estimation of the cost of these combined requirements the SEPA implementation (2008-2010) are used.	At European level, SEPA-related investments for the banking industry are estimated to range between 5.2 billion EUR and 7.7 billion EUR. These investments were necessary to bring processing systems and overall IT architecture into line with the SEPA standards, migrate cards, and adapt customer mandates and contracts. Source: ECB, The economic impact of the single euro payments area, 2007.	- To assess the changes for the banking industry in more detail a full scale cost-benefit analysis of these requirements is warranted. - The data available is valid for the entire EU, as noted in the general assumptions on costs we make abstraction of the costs per Member State.	
Updated SEPA electronic payment schemes to allow for the additional data elements.	2b, 3a/b, 6b, 7a/b				
Modification of the financial infrastructures to allow the enhanced data to flow through the system. This is less intrusive in the case of a manual split payment	2b, 6b				Investment cost for the entire EU-27 Min: 5.000.000.000 / Max: 8.000.000.000
Additional field with the blocked VAT bank account number should be inserted in invoices and credit notes.	1b/5b				
Provide for operating time to manage his blocked VAT bank account.	2a/b, 4c/d, 6a, 8c/d, 12c, 15c	For this cost following cost drivers are applicable: - Number of taxable persons - Costs incurred for managing a financial account by a professional organisation We have identified the operational cost of checking an account in the treasury department of an organisation as comparable applications.	The treasury department of the taxable person will verify the amount on the blocked VAT account that can be used for the payment of VAT on purchases. The treasurer will also regularly check the balance of the blocked VAT account. Treasury consultants (PwC Belgium, 2010) estimate that the operational cost of holding a financial account is approx. 240 EUR per account per year.	After applying the Delphi-method the ascertion was made that the increased operating time for the blocked VAT account is compensated by the effiency gain when filling the VAT return. However for the purposes of the quantitative assessment we take prudence in accounting for this non-monetary benefit.	Operational cost per taxable person Min: 200 / Max: 280

Table 24 – Assumptions on the investment and operational costs of the split payment model (part 2)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
There will be at least twice as many payment requests, i.e. relating to the split + portion to make up for the deficits in the blocked VAT bank account. Most banks charge for payment services on a per transaction basis.	2b, 3a/c/d, 6a/b, 7a/c/d, 11a/b/d, 14a/b/d	For this cost item following cost drivers are applicable: - Number of additional payments - Cost of processing one payment	Processing of payment messages in xml-formats: Clearing and settlement cost of 0,00345 EUR per operation in 2008 Source: UCV, annual report, 2008.	- Prices of payment services and clearing and settlement will differ across the EU-27. - If we assume that all B2B transactions will require at least one additional payment of VAT, the total increase of payments will be 14.5 billion in 2009.	Operational cost per payment Min: 0,0035 / Max: 0,007
Legislative change to move the tax point to the moment of payment.					Unquantifiable/ not known
Management of the direct debit mandates for every taxable person.	10a/b	Comparable to the cost of a regular direct debit mandate	Accepting a Direct Debit Mandate costs approx 3 EUR (e.g. Bank of Ireland, 2010)	- The Delphi method was inconclusive on the costs to be taken into account. - As the data differs across the EU-27 it is a safe assumption to assume there are both investment costs incurred by establishing a direct debit mandate and operational costs incurred by maintaining and executing direct	Investment cost per taxable person Min: 2 / Max: 4 Operational cost per taxable person Min: 2 / Max: 4

Table 25 – Assumptions on the investment and operational costs of the split payment model (part 3)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
C. VAT return					
Standard format and technical infrastructure for the tax authority's bank to report VAT information to the tax authority on a transactional basis.	4c/d, 8c/d, 12c, 15c	The Member States already have the obligation to provide an electronic VAT return platform. The tax authority's bank must provide the necessary data to the tax authority to update the VAT current account and possibly prefill the VAT return. This transfer takes place on a transactional basis (with each payment).	Processing of payment messages in xml-formats: Clearing and settlement cost of 0,00345 EUR per operation in 2008 Source: UCV, annual report, 2008.		Operational cost per payment Min: 0,0035 – Max: 0,007
Standards and system of the tax authority to provide the taxable person with an overview of all transactions booked in his VAT current account.	9a		The cost of prefilling is a fraction of the total investment of an e-VAT platform. The Costs and Benefits of 'Il fisco telematico' in Italy is estimated at: 100 million EUR for the entire changeover initiative. This investment consisted of: 55 % Hardware & Software acquisition, development and maintenance: 29.000.000 EUR, Telecommunication networks: 20.000.000 EUR, Call centres: 2.500.000 EUR 18% Reorganisation costs estimation: Staff remuneration and Consulting services: 17.000.000 EUR 15% Labour relations costs estimation: 14.000.000 EUR 12% Human resources training costs estimation: 11.000.000 EUR Source: MODINIS, The Costs and Benefits of 'Il fisco telematico', 2005.	- The incremental cost incurred by the implementation of the split payment model is the feature of prefilling the VAT return formats. For the purposes of the assessment we take a fraction of the cost incurred with 'il fisco telematico'. - The operational cost of prefilling will be dependent on the frequency the VAT return needs to be generated (monthly, quarterly, yearly). We assume that on average a taxable persons files 4 VAT returns per year. However there are large variances per segment of taxable persons and per Member State. We do not take these variances into account in this assessment.	Investment cost per tax authority Min: 15.000.000 – Max: 25.000.000
Generation of pre-filled draft VAT return for each VAT period.	9a				Operational cost per VAT return Min: 0,0035 – Max: 0,007
Web infrastructure to allow for online amendment, signature and submission of the VAT return.	9b				

Table 26 – Assumptions on the investment and operational costs of the split payment model (part 4)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
D. Settlement of VAT payable					
Management of the VAT payment requests and follow-up on accounts receivable.	11a/b/c/d				This cost is not incremental
E. Settlement of VAT refundable					
Management of the VAT payment refund and follow-up on accounts payable.	14a/b/c/d				This cost is not incremental
F. Audit					
Real-time auditing system to monitor the movements in the blocked VAT bank accounts.	Tax authority monitors movements in the blocked VAT bank accounts.	The cost of this application will of course depend on the functionalities of the required checks and the volume of data. Due to the large data volume (blocked VAT accounts with payment information) it is technically difficult to audit real time on the transactional system and a data dump for auditing purposes will be necessary. We assume this functionality is already included in the application for managing the current accounts. The additional requirement for auditing is specific auditing software, of which the investment cost is limited. Additional costs will be incurred in training the tax inspectors.	- System for real-time audit of payments: Implementation fee: 150.000 - 300.000 EUR Operational expenses (per account): 0,5-0,75 EUR Source: PwC expert judgement, 2010. - In Portugal Tax Authorities invested in Computer-Assisted Audit Techniques (CAATS). 1.600 training days were taken up during the implementation to train 1.400 tax inspectors (Interview of PwC Belgium with PwC Portugal specialized in Computer Assisted Audit Techniques, 2010). - Portugal has around 11.000 employees in tax administration of which 1.400 tax inspectors received special training. This amounts to around 1,5 training days per tax	- The cost can be influenced by specific requirements of a Member State (number of auditors that need to have access to the system, level of integration with other systems,...) - Based on information gathered on the IOTA website we estimate that In the EU-27 the average tax administration staff counts about 23.000 employees - We assume that for each Member State around 1.000 to 3.000 tax inspectors will receive special training to work with CAATS. - We assume that on average 1 training day costs 1.000 EUR.	Investment cost per tax authority Min: 1.650.000 – Max: 4.800.000 Operational cost per account Min: 0,5 – Max: 0,75

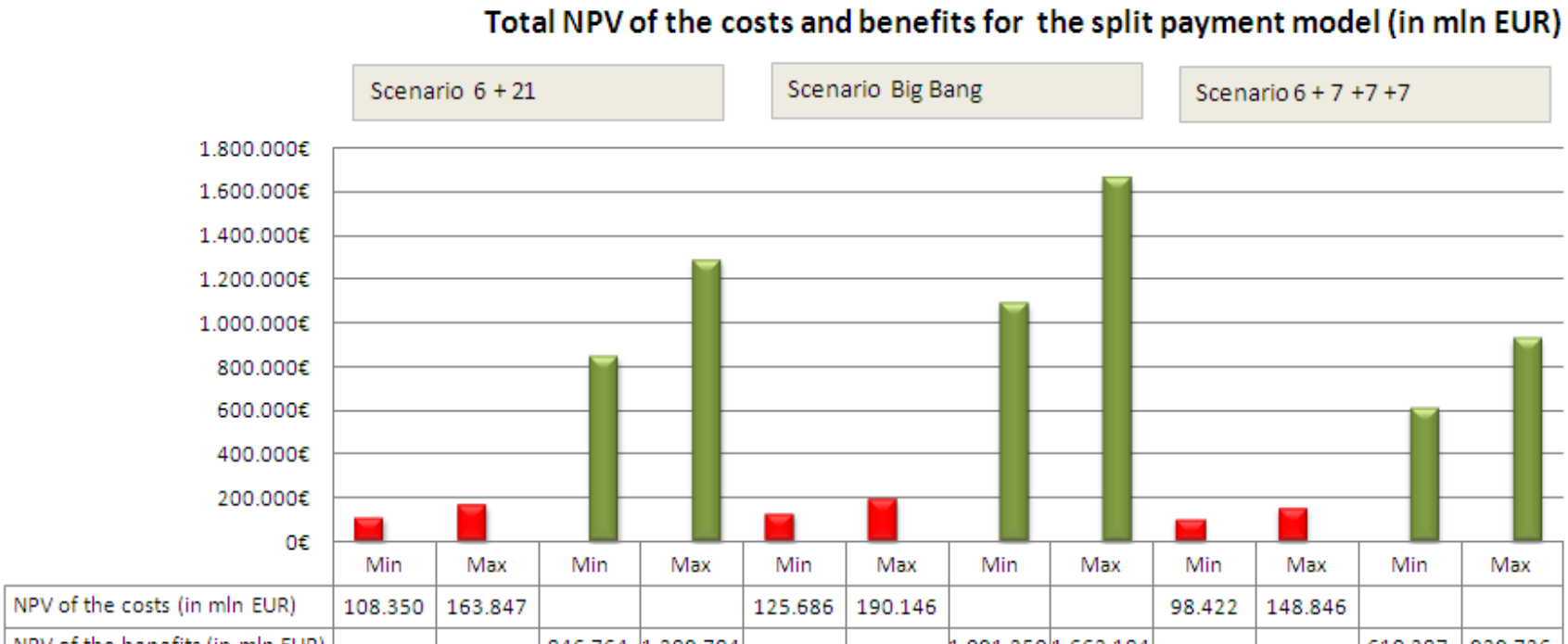
Table 27 – Assumptions on the investment and operational costs of the split payment model (part 5)

7.2.10.3 Cost/benefit analysis

331. The results of the cost/benefit calculations in each of the scenarios are presented in the following graphs. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. The methodology for this and more detailed calculations are given in annexes 2 and 3.

332. To have a clear view on when the actual investments need to be made and when the expected benefits[98] are first generated we also present the annual cost and benefits (until 2028) of the model for each scenario separately together with an overview of all scenarios combined. As such it becomes apparent when exactly the highest costs and benefits are incurred. It should be noted that the costs and benefits largely depend on the way the tax authorities use this info and that for each scenario the benefits are only accounted as from the year when all Member States are fully operational within the model.

[98] The calculations of the benefits only include direct earn-back effects by improved VAT recovery (caused by the reduction of different types of VAT fraud and the reduction of non compliance). Indirect earn-back effects, such as reduction of administrative burden, have not been taken into account in the calculation as they do not represent a direct cash flow that can be used to finance the investments. Quantitative and qualitative information of indirect effects is treated separately in the text.



	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
NPV of the costs (in mln EUR)	108.350	163.847			125.686	190.146			98.422	148.846		
NPV of the benefits (in mln EUR)			846.764	1.289.784			1.091.250	1.662.184			610.387	929.736

Figure 26 – Total NPV of the costs and benefits for the split payment model

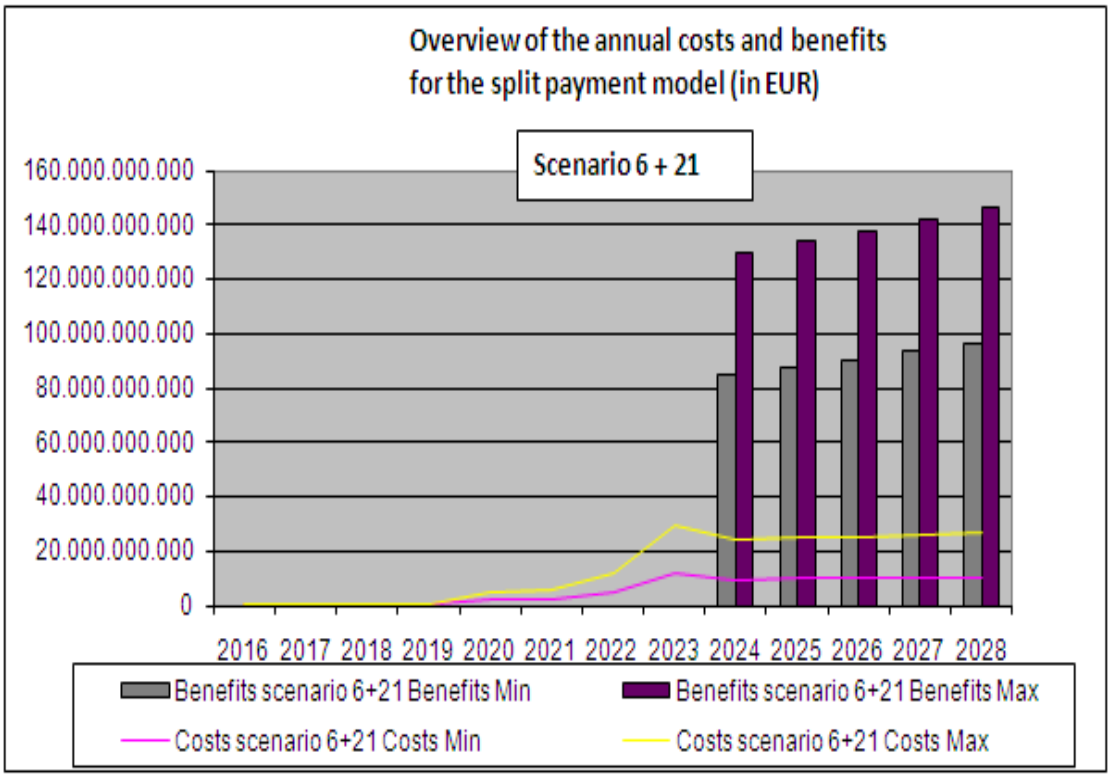


Figure 27 – Overview of the annual costs and benefits for the split payment model in scenario 1

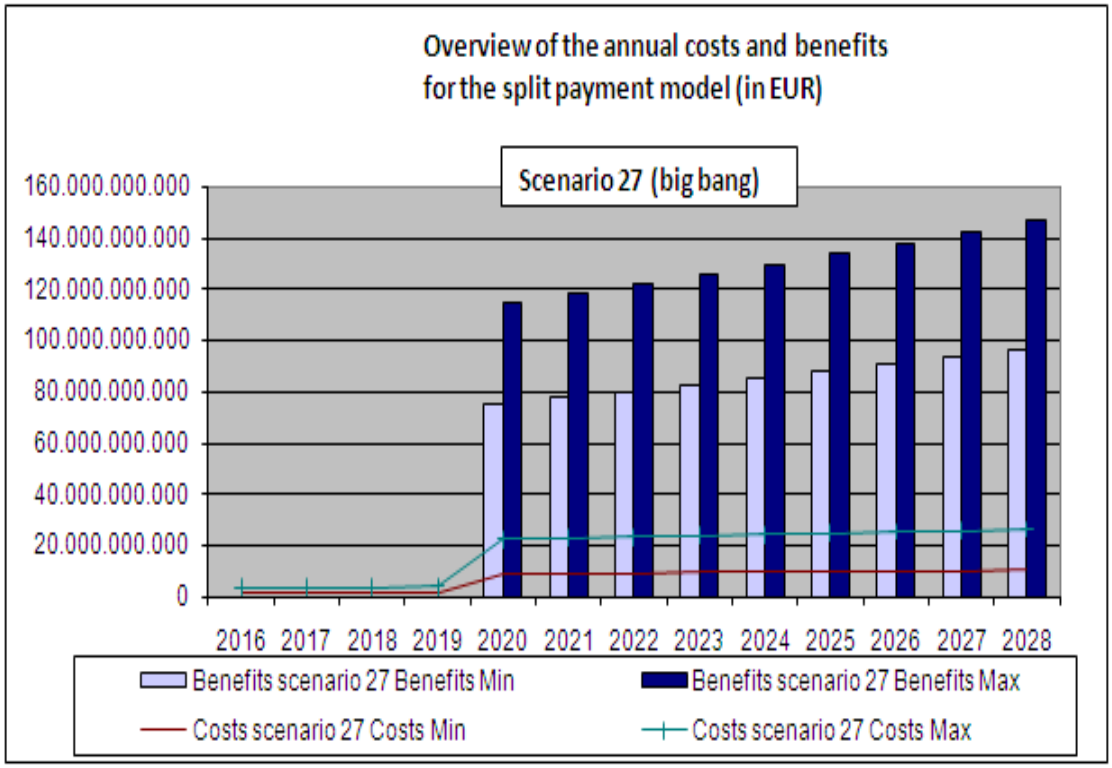


Figure 28– Overview of the annual costs and benefits for the split payment model in scenario 2

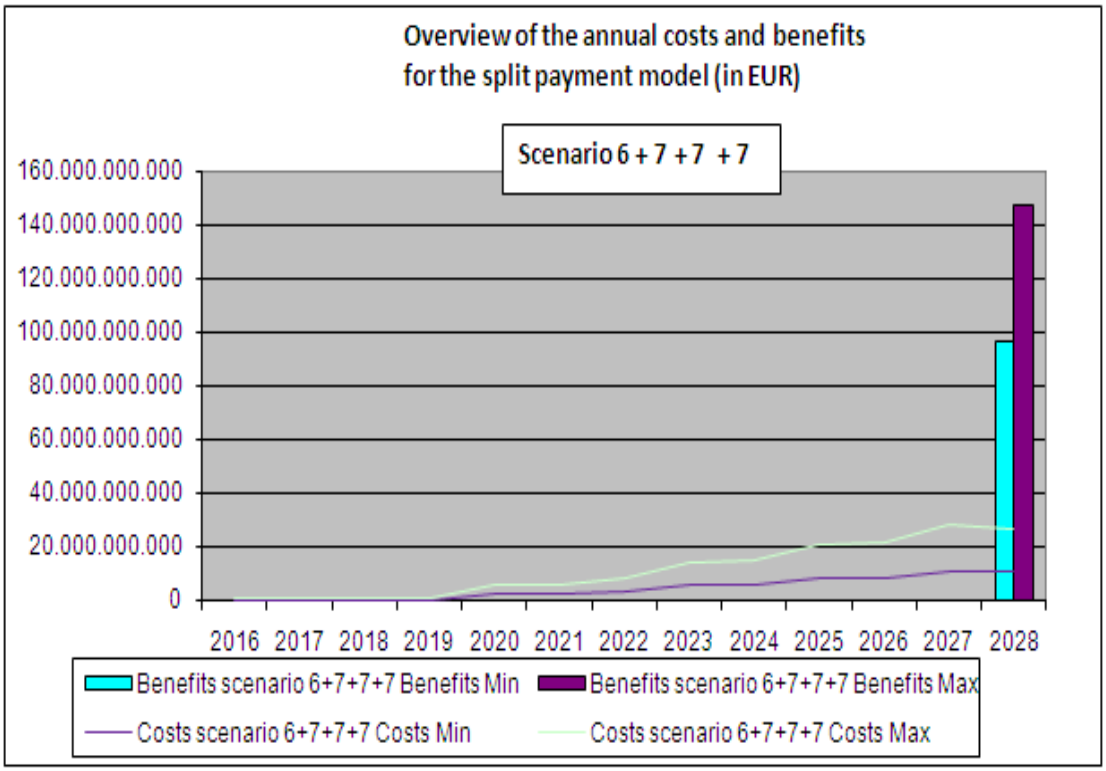


Figure 29– Overview of the annual costs and benefits for the split payment model in scenario 3

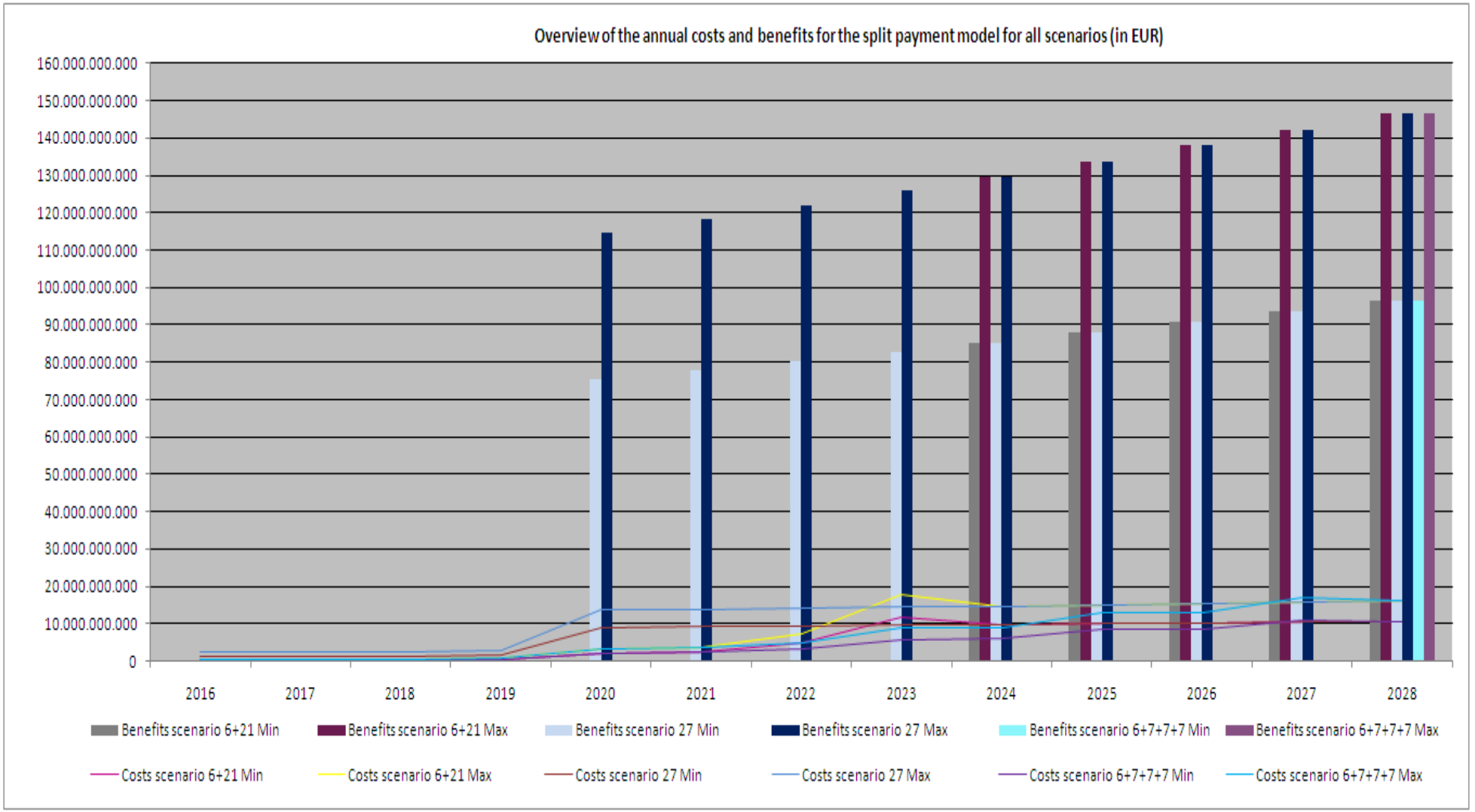


Figure 30 – Overview of the annual costs and benefits for the split payment model for all scenarios

7.2.10.4 Conclusions

333. The total NPV of the investment and operational costs for the time frame 2016-2038 varies between EUR 98 billion and EUR 190 billion. In the worst-case scenario the NPV of the potential of the model to reduce the VAT Gap (based on the assumptions discussed in the previous section 6.3.3.3) is estimated at EUR 610 billion (gradual implementation with minimal benefits).

334. If we compare the NPV of the maximal cost[99] estimate with the NPV of the minimal return in reducing the VAT Gap, the cost recovery percentage is 400% higher for all scenarios. We conclude that the investment and operational costs of the model are probably lower than the benefit they generate by reducing the VAT Gap.

335. The graphs presenting the annual costs and benefits showed that attention has to be paid to the fact that investments will need to be made from 2016 and the recovery in terms of reduced VAT Gap will only be realised after the system has been implemented (at the earliest in 2020 in scenario 2). This means that the total investment cost and part of the operational cost will have to be prefinanced depending on the scenario of implementation. The return will only be realised in the long run, from 2020 or, for scenario 3, from 2028 onwards.

336. The evaluation also shows that the big bang scenario however slightly more expensive, creates the highest NPV of the expected benefits as they are realised earlier in time.

337. It should be noted that the investment and operational cost may be different if the technology needed to manage the blocked VAT bank accounts would be centralised in one EU platform instead of 27 different platforms, i.e. one for each Member State.

338. As stated in the previous sections, these amounts are rough estimates, based on a lot of assumptions both on the cost and benefit side. We advise extreme caution when interpreting and analysing these results. However , the assessment proves that it might be worthwhile to explore the feasibility of the split payment model further.

[99] The base year for the NPV calculation is also 2015, so the costs and benefits are compared over the same period.

7.3 The central VAT monitoring database model

7.3.1 Description and scope

339. In this model, all invoice data of a taxable person would be sent to a central VAT monitoring database (*"push-model"*). This database can be managed by the tax authority, by a third party or by a public-private body.

340. No changes are made to the VAT collection model, but the possibilities for real-time auditing and intervention by the tax authority to investigate fraud would be increased.

341. A taxable person is still responsible for charging the correct amount of VAT on the invoice. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

342. However, invoice data should be sent electronically and in real time to a central VAT monitoring database. The taxable person may be provided with a pre-filled VAT return based on this invoice data.

343. Reference is made to South Korea, where a similar model is being implemented.

344. This model can be used in a B2B environment. It could also be used in a B2C environment if it is imposed that invoices be required for B2C transactions. If this is the case, a specific obligation will have to be laid down in the EU VAT Directive regarding B2C invoicing obligations. However, If the geographic scope includes other transactions than domestic ones (local supplies of goods and services), this may lead to difficulties (see section 7.3.5).

7.3.2 Step-by-step flowchart[100]

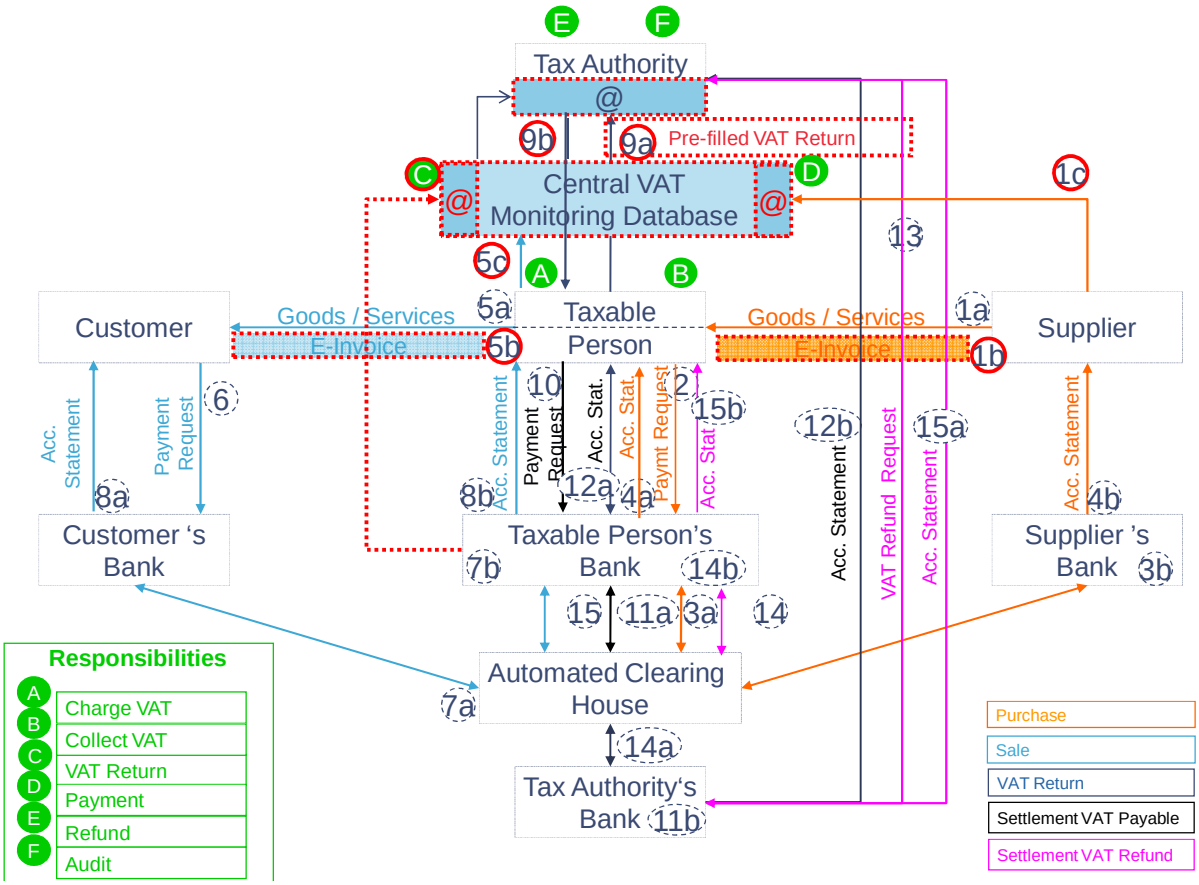


Figure 31 – The central VAT monitoring database model

7.3.3 Process description[101]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme, a *"Taxable Person"* purchases goods or services from a *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an electronic invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 1c	The electronic invoice data is sent to the Central VAT Monitoring Database.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).

[100] Please note that the bold red circles are the new steps compared to the current VAT model.
[101] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an electronic invoice to Customer, stating the taxable amount and the VAT amount.
Step 5c	The electronic invoice data is sent to the Central VAT Monitoring Database.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting through VAT return	
Step 9a	At the end of the taxable period, Taxable Person receives a pre-filled VAT return based on the invoice data sent electronically to the Central VAT Monitoring Database. The VAT return states the net VAT balance.
Step 9b	Taxable Person has to approve or amend, sign and file the VAT return.
Settlement of VAT balance	
At the end of the taxable period, Taxable Person either has to pay VAT to Tax Authority or is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.

Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.
Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
In this model, Tax Authority would be able, in real time, to monitor and audit invoices, flows and the corresponding reporting in the VAT return. Tax Authority can also use risk-profiling software to identify suspicious transactions, as soon as the invoice data is made available. Tax Authority could use these risk indicators immediately to initiate further investigations and on-site audits to stop fraudulent activities and secure collection of VAT. A refund of the net VAT balance could be refused if no invoice data were sent to the Central VAT Monitoring Database.	

7.3.4 Roles and responsibilities

a) Definition of the roles and responsibilities grid

345. Below, in the roles and responsibilities grid (referred to as RIL grid), we define the following:

- **Role:** the task to be performed;
- **Responsible:** the stakeholder who has to perform the task;
- **Informed:** the stakeholder who is kept up to date on the task;
- **Liable:** the stakeholder who will be held accountable in accordance with the VAT legislation for ensuring that the task is performed and who may incur penalties if the task is not performed.

346. Please note that the responsibility shifts and the role changes versus the current VAT model are shaded in the grid.

b) The RIL grid[102,103]

[102] Please note that the blue boxes are the new roles and responsibilities compared to the current VAT model.

	Role	Taxable Person	Tax Authority	Taxable Person's Bank	Tax Authority's Bank
A & B	Charge VAT	Responsible Liable	Informed		
	Collect VAT	Responsible Liable			
C	Prepare pre-filled VAT return	Informed	Responsible		
	Prepare and file VAT return	Responsible Liable	Informed		
D	Settlement of VAT payable	Liable Responsible	Informed		
E	Settlement of VAT refund	Informed	Responsible Liable		
F	Audit	Informed	Responsible		

Table 28 – The RIL grid for the central VAT monitoring database model

7.3.5 Sustainability of the model under different scenarios

347. We have identified a non-exhaustive list of scenarios to test the sustainability of the central VAT monitoring database model. These scenarios deal with special VAT technical situations, in which the limitations of the model are tested. Based on this scenario, it is clear that cross-border supplies will cause technical and practical issues if the model is not fully harmonised for all EU Member States.

348. Please see below for an explanation for each of the scenarios.

Supplies subject to local VAT to a taxable person established outside the EU and not registered in the country of supply

349. There may be a risk in terms of data protection and privacy (i.e. data leakage) for supplies subject to local VAT to a taxable person that is established outside the EU and not registered in the country of supply.

Supplies subject to local VAT to a taxable person established in another Member State and not registered in the country of supply

[103] Please note that the first column matches with the headings of the process description.

350. There may be a risk in terms of data protection and privacy (i.e. data leakage) for supplies subject to local VAT to a taxable person that is established in another Member State and not registered in the country of supply.

Supplies to taxable persons that require an invoice format that is different from the tax authority's central VAT monitoring database requirements

351. In this model, the supplier is required to send the invoice both to the customer and to the central VAT monitoring database. An issue arises if the customer requires another invoice format (e.g. specific EDI format agreed between parties) than the format in which the invoice needs to be sent to the central VAT monitoring database. Practically this situation can be resolved (e.g. technical solution, modifying the format manually). However, this may be at a significant compliance cost for businesses.

Cross-border supplies

352. If a taxable person performs a supply that takes place in the Member State of the customer, one should identify to which central VAT monitoring database the invoice needs to be sent. In the case, for example, of a cross-border supply of services that falls within the scope of article 44 of the VAT Directive, the Member State of the supplier will need to be informed, especially if a pre-filled VAT return has been provided for under the model. However, the Member State of the customer will also need to be informed, especially if a pre-filled VAT return has been provided for under the model .

353. Consequently, if one wants to realise the full potential of a central VAT monitoring database and avoid practical issues and a high compliance cost, it is necessary that all Member States that implement this model use the same (i.e. harmonised) technical format, standards and set-up systems that are interoperable and capable of exchanging information.

Importation of goods

354. If a taxable person imports goods, in principle, no invoice needs to be issued. The importation is proven by means of an importation document. Therefore, it is necessary that the electronic import documents and data is also uploaded to the central VAT monitoring database by the customs authority.

Credit notes and "self-invoices"

355. We have not identified any issues or benefits with regard to issuing credit notes. This could follow the same process as the *"regular"* invoices.

356. The same can be said for "*self-invoices*" (e.g. an invoice for a deemed supply of goods or services in accordance with articles 17, 18 and 26 of the VAT Directive). However, as there is no counter-party, there is a higher likelihood that no "*self-*

invoice" is issued and/or that the invoice is not sent to the central VAT monitoring database.

Taxable persons with a limited right to deduct VAT or invoice received on which VAT cannot be deducted

357. If one wants to make the pre-filled VAT return as accurate as possible, it would be required to also embed information on the customer's right to deduct VAT in the central VAT monitoring database. However, it can also be provided that taxable persons with a limited right to deduct VAT need to amend their VAT return for each VAT period.

358. Furthermore, if a pre-filled VAT return has been provided for, it is likely that taxable persons with a 100% right to deduct VAT will also have to make amendments to the VAT return (e.g. no deduction of VAT on certain invoices that relate to private use).

Bad debts

359. We have not identified any specific issues regarding bad debts.

Partial payment

360. We have not identified any specific issues regarding partial payment.

Payments in cash

361. We have not identified any specific issues regarding payments in cash.

Payments with credit cards

362. We have not identified any specific issues regarding payments with credit cards.

VAT grouping

363. We have not identified any specific issues regarding transactions made within or with VAT groups.

Technical capacity

364. Although it is difficult to determine whether the central VAT monitoring database model is possible from an IT technical viewpoint, we have tried to make a first assessment of the sustainability of the model, on the basis of data available in the EU.

365. In the EU, 29 billion invoices are issued on a yearly basis[104]. The size of an e-invoice (without attachment) is between 20 and 100 Kb. On average, the size of the e-invoice (without attachment) is 50 Kb. As the largest number of invoices is issued in Germany (23% of the 29 billion), we take Germany as an example to test the IT capacity. Please find below a first calculation.

Invoices in EU	29.000.000.000
Germany	23%
Invoices in Germany	6.670.000.000
Kb/invoice	50
Kb in Germany	333.500.000.000
Mb in Germany	325.683.594
Gb in Germany	318.050
Tb in Germany	311

Table 29 – Overview of invoice information in the EU and Germany on a yearly basis

366. On the basis of this calculation, existing back-up and data centres should be able to handle this capacity of data. However, it should be further analysed whether other IT issues could arise (e.g. peak throughput times) and whether, from a practical viewpoint, tax authorities are able to implement this model.

7.3.6 Reporting obligations and possibility to create a pre-filled VAT return

367. The reporting obligations of taxable persons would increase to the extent that they would have to send a copy of their invoices to the central VAT monitoring database.

368. Furthermore, the tax authority would provide the taxable person with a pre-filled VAT return on the basis of the invoice flows reported to the central VAT monitoring database. Many taxable persons would not have to significantly amend the pre-filled VAT return (depending whether B2C is included or not). However, taxable persons with a limited right to deduct input VAT would most likely have to amend the VAT

[104] Billentis report, "E-invoicing / e-billing in Europe, taking the next step towards automated and optimised processes", February 2009, http://www.billentis.com/Publikationen_e.htm

return in any event. Furthermore, taxable persons with a 100% right to deduct VAT would also have to make amendments to the VAT return from time to time (e.g. no VAT deduction for certain invoices that relate to private use or where input VAT deduction is not allowed (e.g. cars), not all information on cross-border transactions, especially purchases from non-domestic suppliers, will be included in the pre-filled VAT return).

7.3.7 Cash-flow impact

369. This model does not cause any changes in the cash-flow relating to VAT.

7.3.8 Mandatory or optional character

a) Mandatory or optional for the taxable person

370. The main disadvantage of making this model optional is the lack of effectiveness. The benefit of this model is that the tax authority can follow all transactions for which an invoice is issued and thus identify invoices triggering risks using defined parameters. If the model is made optional, it will significantly reduce the benefit of being able to detect transactions generating potential risks. This is because it is likely that fraudsters, causing the VAT Gap, will not opt in and will not send their invoices to the central VAT monitoring database. Furthermore, the benefits of preparing a pre-filled VAT return will be reduced if not all invoices are sent to the central VAT monitoring database (and thus data is not complete to prepare the pre-filled VAT return).

371. Consequently, in order to meet the objectives set, the model needs to be mandatory. In that regard, it is important to mention that, for this model to work, attention needs to be paid to ensuring that the technical features and requirements of the central VAT monitoring database are harmonised within the EU.

b) Mandatory or optional for the Member States

372. This model could be optional if all Member States use harmonised technical features and requirements.

373. If it would, however, be mandatory for all Member States, the pre-filled VAT return would become far more accurate. Also the exchange of data and the use in cross-border joint audits would be far more effective and efficient. Moreover, if the tax authority receives all invoice data electronically, it may be envisaged to eliminate certain information obligations for taxable persons (e.g. intra-Community listings for goods and services).

7.3.9 Best practices

South Korea[105]

374. Taxable persons who are registered for VAT and operate as a corporate legal entity (not individual VAT business operators) can use either existing paper VAT invoicing or electronic VAT invoicing during 2010. However, electronic VAT invoicing will be made mandatory from 2011 onwards. Should the corporate taxable persons adopt electronic VAT invoicing and file electronic VAT invoices to the National Tax Service ("*NTS*") prior to 2010, certain tax incentives (i.e. KRW 100 tax credit per transaction item, which shall not exceed KRW 1 million (EUR 668,37[106]) per annum, and waiver of submission of a VAT invoicing summary) are granted until 2011.

375. Starting 2012, electronic VAT invoicing will become mandatory for individual VAT business operators who are required to keep double-entry bookkeeping.

376. Taxable persons shall issue VAT invoices electronically and send the summary sheet of invoices issued online to the NTS by the 15th day of the month following the month electronic invoices were issued. As far as electronic invoices filed online to the NTS are concerned, taxable persons will be exempt from the requirement of submitting the aggregate summary of VAT invoices by supplier and by purchaser at the time of filing VAT returns.

Tanzania[107]

377. Since 1 July 2010 the former electronic cash registers (ECRs) which were used to record sales and issue receipts by retailers were replaced by Electronic Fiscal Devices. The system requires all VAT registered traders to use electronic fiscal devices to issue invoices and receipts for the supplies made. These are linked to the tax authority's central data system to monitor taxable person's transactions.

378. In general, taxable persons should comply with the following e-invoicing regulations:

- the sale or purchase invoices are kept on a diskette or similar electronic storage means;
- if a taxable person issues the electronic VAT invoice and reports electronically to the NTS by the 15th day of the month following the month electronic invoices were issued, the retention period responsibility may be waived;
- the taxable person should transmit the e-invoices through a secure system using a password and electronic signature authorised by the certified public body under the Korean Electronic Signature Law;

[105] Based on information provided by PricewaterhouseCoopers South Korea.
[106] European Central Bank, Euro foreign exchange rates, EUR 1 = KRW 1452,7, http://www.ecb.int/stats/exchange/eurofxref/html/index.en.html, 7 May 2010.
[107] PwC Finance Bill Update 2010, http://www.pwc.com/en_TZ/tz/pdf/finance-bill-update-2010.pdf

- e-invoices (both sales and purchases) transmitted over the internet must be kept on electronic media (e.g. hard disks).

7.3.10 Quantitative assessment

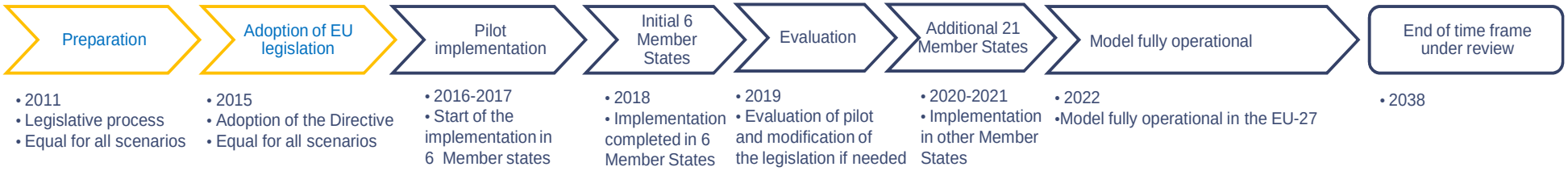
7.3.10.1 Timeline for the implementation and implementation scenarios

379. We assume that the model can also be implemented following three different scenarios, comparable to the split payment model. The only difference with the split payment model is the assumption that the implementation can be completed in each of the different scenarios two years earlier than the split payment model i.e. in a shorter time frame as it involves fewer stakeholders.

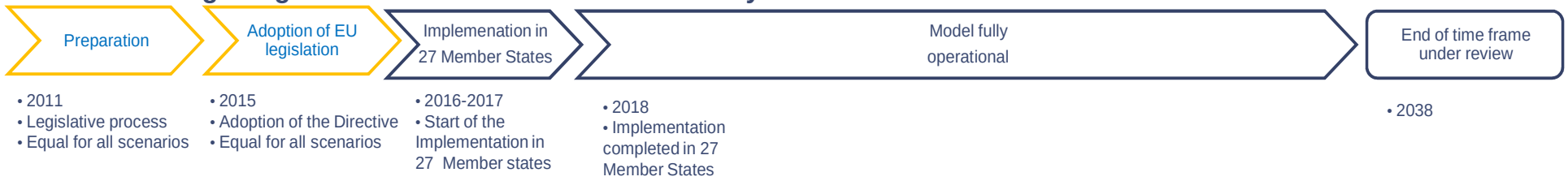
380. The time frame is presented on page 189.

Implementation time frame for the central VAT monitoring database model

SCENARIO 1: 6 pilots + 21



SCENARIO 2: Big bang in 27 Member States simultaneously if needed



SCENARIO 3: Phased implementation in EU-27: 6+7+7+7

Implementation at European level

Implementation at the level of the Member States

Figure 32 – Implementation time frame central VAT monitoring database

7.3.10.2 Specific assumptions for this model

381. Below, we make specific assumptions regarding the costs of the split payment model. In column 1 of the following table we identified the requirements of the model that will drive the costs. In order to quantify these requirements we first linked them to the step-by step flowchart, and then we made assumptions on comparable applications or cost drivers for the (combined) requirements. Based on the available data and by applying the Delphi-method[108] (where data is contradictory or missing) we make high level estimations on the investment and operational costs of the requirements of the model. As stated in section 6.2.3 we advise caution in interpreting and analysing these cost estimations. For the general assumptions on the costs, we refer to section 6.

[108] The Delphi method is a systematic, interactive forecasting method which relies on a panel of experts. The Delphi technique, by definition, is a group process involving an interaction between the researcher and a group of identified experts on a specified topic, usually through a series of questionnaires.

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
A&B. Purchase and sale transaction					
E-invoicing standards and applications with all required data elements needed for VAT monitoring at a transactional level.	1b; 5b	The Member States already have the obligation to support e-invoicing. The most common standards used are UBL and UN/CEFACT, however many variances still exist.	- The annual licencing cost for a taxable person to operate an outsourced e-invoicing platform is estimated between 75 and 250 EUR (Ingis, 2010). - Additional investments are needed to adapt the system. - Developing an e-invoicing platform is estimated as a maximal one-off cost of 100.000 EUR (PwC expert judgement, 2010). - Electronic invoicing reduces the cost per invoice to between 0.28 and 0.47 EUR a reduction of 70% to 75% (SEPA: potential benefits at stake, Capgemini, 2007). - There are predicted operational gains from switching from paper to electronic invoices. This amounts to cost savings between 1,13 and 1,65 EUR per invoice. These cost savings were added to the the calculation of the NPV of the benefits (SEPA: potential benefits at stake, Capgemini, 2007).	- It may be practically impossible to introduce one single standard for e-invoicing. This will have implications on the requirements for the VAT data warehouse which will then need to support several standards. - When e-invoicing is fully mandatory for B2B activities the cost of compliance per taxable person will strongly decrease due to foreseeable technical evolutions. - We do not dispose of sufficient information to categorise the different taxable persons (and their individual e-invoicing preferences and requirements). Therefore we divide the maximal estimated cost as it is not reasonable to expect that all businesses will develop their own e-invoicing platform. We estimate that the cost of 1 e-invoicing platform can be shared by 50 to 400 taxable persons.	Investment cost per taxable person Min: 250 — Max: 2.000 Operational cost per e-invoice Min: 0,28 — Max: 0,47
Legislation to make e-invoicing mandatory.					Unquantifiable/ not known

Table 30 – Assumptions on the investment and operational costs of the central VAT monitoring model (part 1)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
Central VAT Monitoring Database infrastructure that is able to capture all invoicing and transaction details	1c; 5c	The cost drivers are similar as the cost drivers for model 1 (infrastructure to manage the current accounts by the tax authority). However, the size of the messages (e-invoicing data) will be much larger and the data warehouse needs more capacity as it will contain both the payment and the invoicing information for each taxable person.	- The average size of an e-invoice is between 20kb and 100 kb. - A recent study states that worldwide the cost of keeping 1 gigabyte equals approx 3,3 $ in 2010 and that this cost will decrease seriously in future due to new technological developments. Source: Digital Universe Study, 2010.	These cost estimates however are too global and not specific enough to be used in this context. Specific market research will be needed to estimate the cost of capacity needs for the warehouse. In this high level assessment we assume the operational cost will be 50% higher than the operational cost of maintaining the application to manage the current accounts in model 1.	Investment cost per tax authority Min: 5.000.000 – Max: 15.000.000 Operational cost per tax authority Min: 9.750.000 – Max: 16.800.000
Communication infrastructure that allows for the transaction information to be sent to the Central VAT Monitoring Database.	1c; 5c				
C. VAT return					
Standards and system of the tax authority to provide the taxable person with an overview of all transactions booked in his VAT current account.	9a/b	Idem split payment model	Idem split payment model	Idem split payment model	Investment cost per tax authority Min: 15.000.000 – Max: 25.000.000
Generation of pre-filled draft VAT return for each VAT period.	9a/b				Operational cost per VAT return Min: 0,0035 – Max: 0,007
Web infrastructure to allow for online amendment, signature and submission of the VAT return.	9a/b				
D. Settlement of VAT payable (no changes to the current VAT model)					
E. Settlement of VAT refundable (no changes to the current VAT model)					
F. Audit					
Data mining infrastructure, business intelligence systems and risk profiling software that are able to process the captured data and to detect risks and fraudulent behaviour.	In this model, the tax authority would be able, in real time, to monitor and audit invoices, flows and the corresponding reporting in the VAT return.	Idem split payment model	Idem split payment model	Idem split payment model	Investment cost per tax authority Min: 1.650.000 – Max: 4.800.000 Operational cost per taxable person Min: 0,5 – Max: 0,75

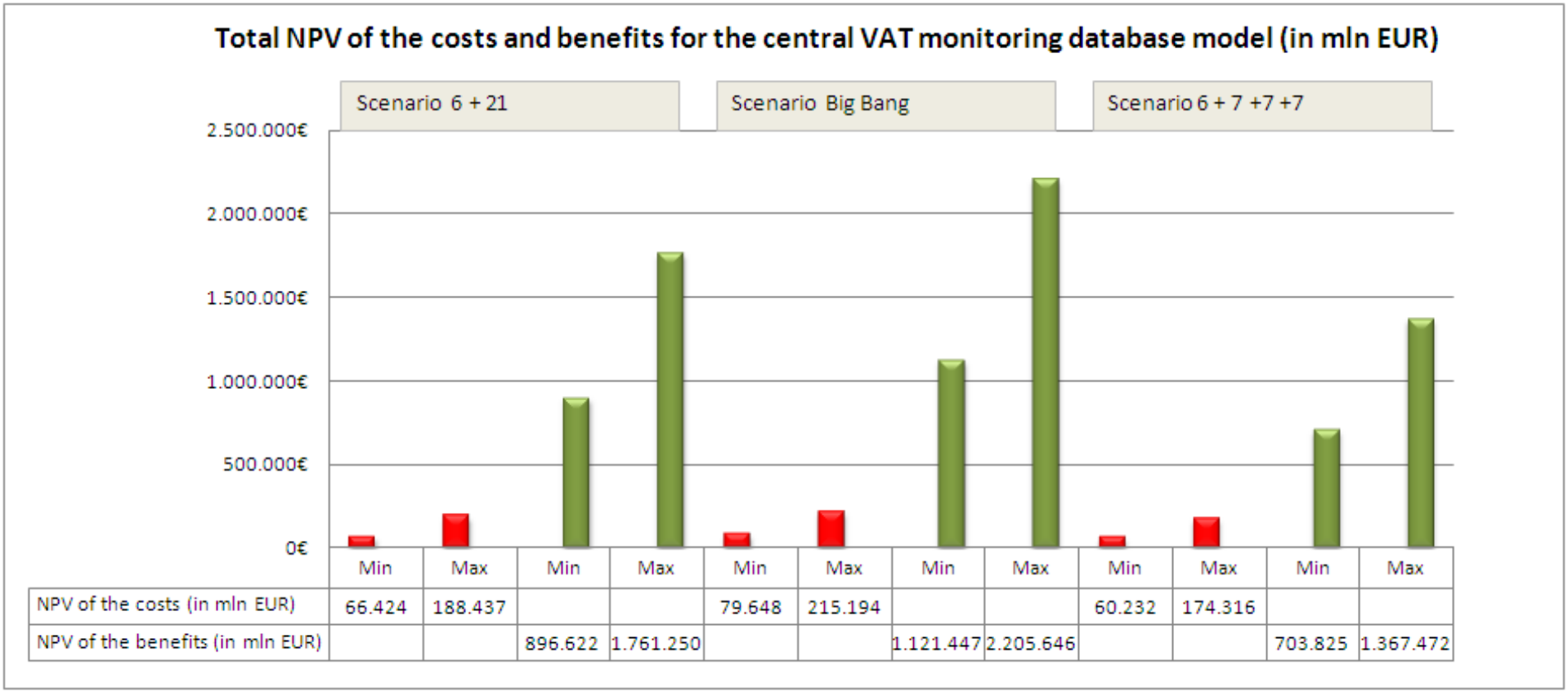
Table 31 – Assumptions on the investment and operational costs of the central VAT monitoring model (part 2)

7.3.10.3 Cost/benefit analysis

382. The results of the cost/benefit calculations in each of the scenarios are presented in the following graphs. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. The methodology for this and more detailed calculations are given in annexes 2 and 3.

383. To have a clear view on when the actual investments need to be made and when the expected benefits[109] are first generated we also present the annual cost and benefits (until 2028) of the model for each scenario separately together with an overview all scenarios combined. As such it becomes apparent when exactly the highest costs and benefits take place. It should be noted that the costs and benefits largely depend on the way the tax authorities use this information and that for each scenario the benefits are only accounted as from the year in which all Member States are fully operational within the model.

[109] The calculations of the benefits only include direct earn-back effects by improved VAT recovery (caused by the reduction of different types of VAT fraud and the reduction of non compliance). Indirect earn-back effects, such as reduction of administrative burden, have not been taken into account in the calculation as they do not represent a direct cash flow that can be used to finance the investments. Quantitative and qualitative information of indirect effects is treated separately in the text.



	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
NPV of the costs (in mln EUR)	66.424	188.437			79.648	215.194			60.232	174.316		
NPV of the benefits (in mln EUR)			896.622	1.761.250			1.121.447	2.205.646			703.825	1.367.472

Figure 33– Total NPV of the costs and benefits for the central VAT monitoring database

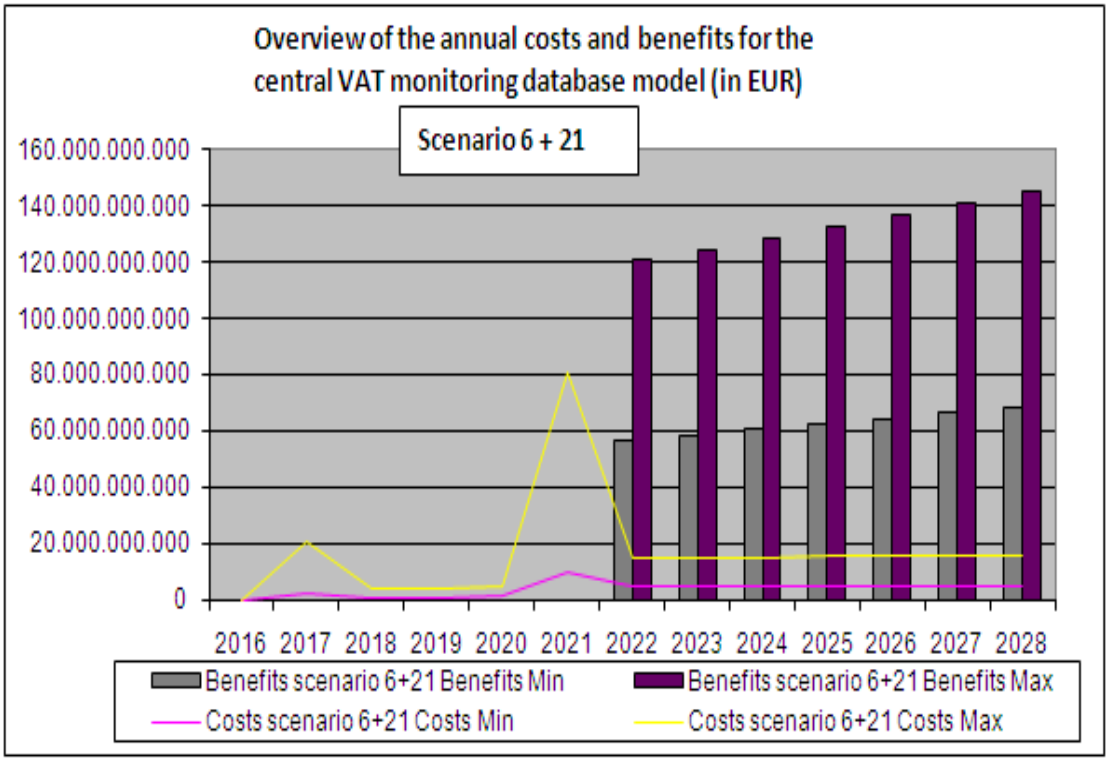


Figure 34 – Overview of the annual costs and benefits for the central VAT monitoring database model in scenario 1

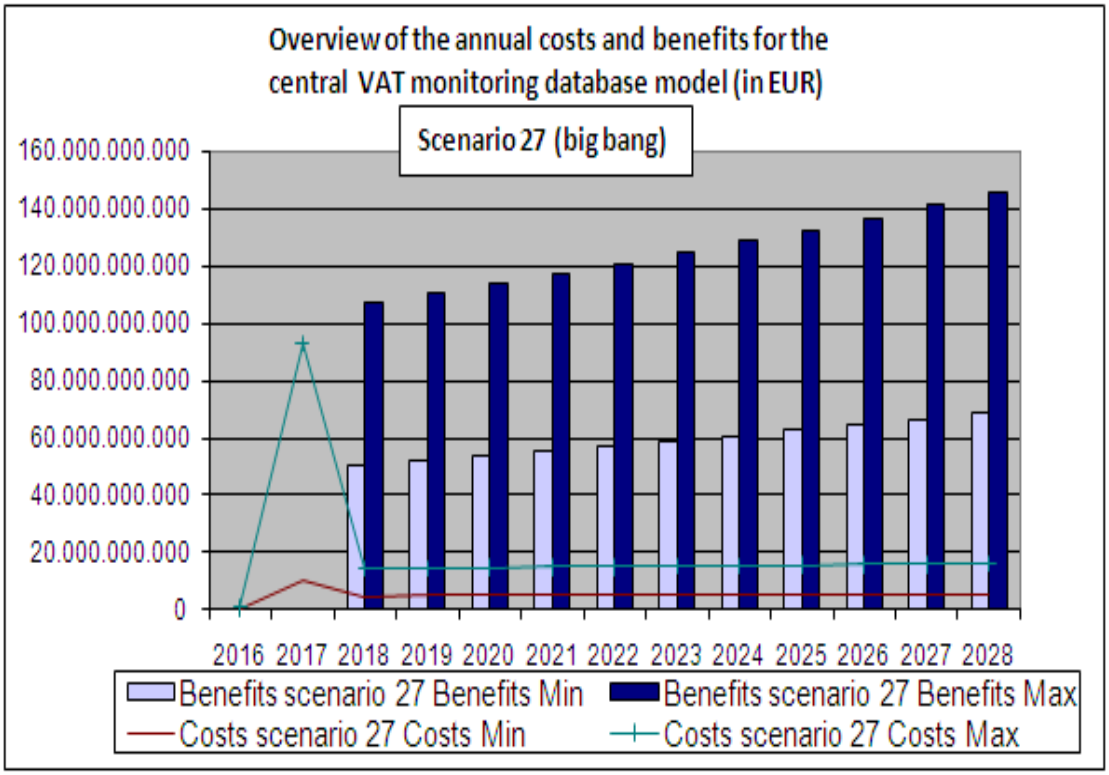


Figure 35 – Overview of the annual costs and benefits for the central VAT monitoring database model in scenario 2

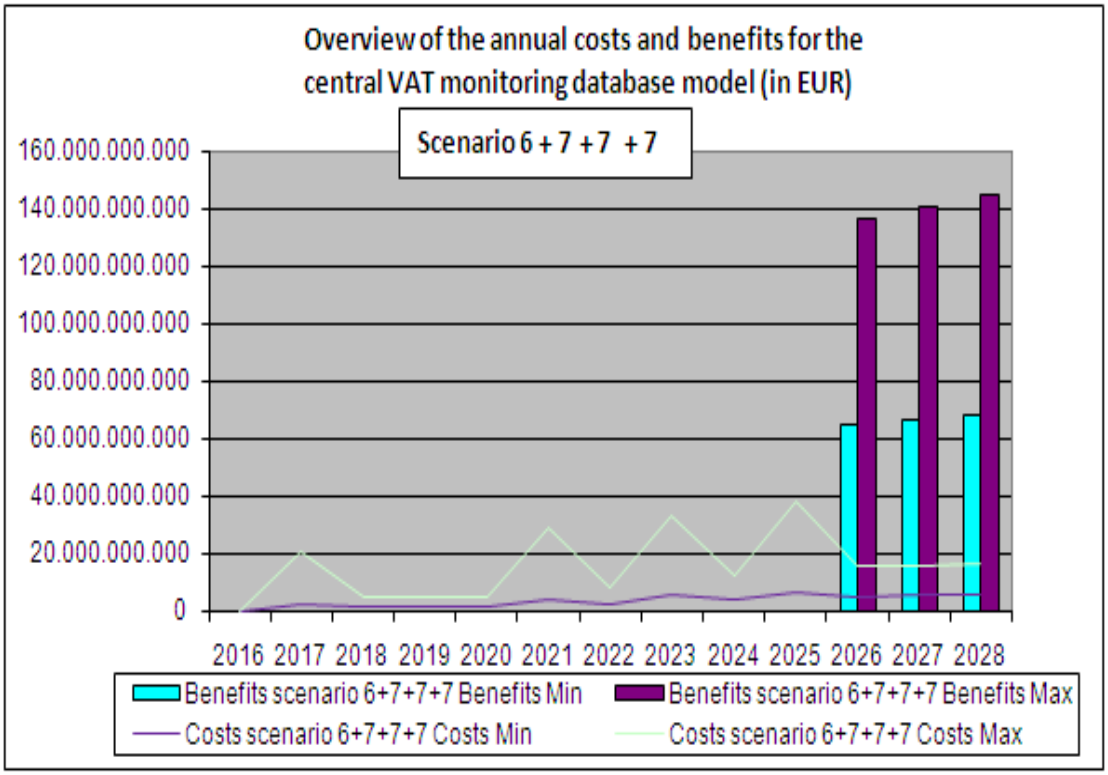


Figure 36 – Overview of the annual costs and benefits for the central VAT monitoring database model in scenario 3

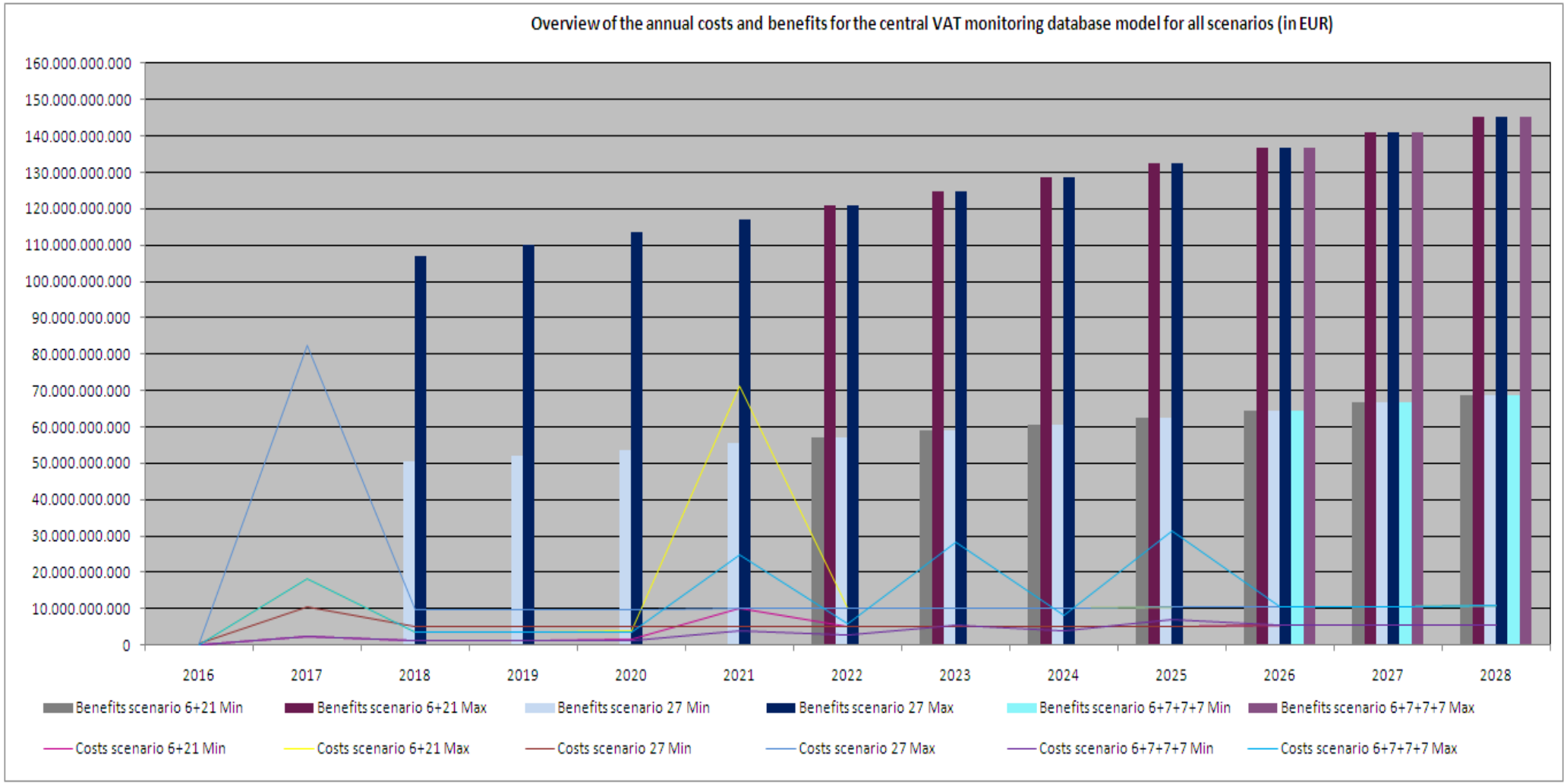


Figure 37 – Overview of the annual costs and benefits for the central VAT monitoring database model in all scenarios

7.3.10.4 Conclusions

384. The total NPV of the investment and operational costs for the time frame 2016-2038 varies between EUR 60 billion and EUR 215 billion. In the worst-case scenario the NPV of the potential of the model to reduce the VAT Gap (based on the assumptions discussed in the previous section 6.3.3.3) is estimated at EUR 519 billion (gradual implementation with minimal benefits).

385. If we compare the NPV of the maximal cost[110] estimate with the NPV of the minimal return in reducing the VAT Gap, the cost recovery percentage is at least 300% in all scenarios. We conclude that the investment and operational costs of the model are probably lower than the benefits they generate by reducing the VAT Gap.

386. Compared to the split payment model, the total NPV of the cost in the maximal scenarios is approximately 15% higher. This model is based on the centralisation of all invoices in an electronic manner. The Member States already have the obligation to support e-invoicing, but further investments will need to be made both by Member States and by taxable persons in order to implement and monitor e-invoicing on a large scale. Depending on how many taxable persons will invest in the development of their own e-invoicing solution (compared to acquiring a service offered by a third service provider) the investment costs might be higher. This explains the substantial difference between the minimal and maximal costs.

387. Not only the costs are higher than in the split payment model, the estimated benefits are also higher compared to the benefits of the split payment model. This is explained by the fact that it is assumed that the benefits in this model can be realised two years earlier than in the split payment model. However, realising the potential benefits will depend on the effective monitoring of the B2B invoicing data and the actions taken by the tax authorities.

388. The graphs presenting the annual costs and benefits showed that attention has to be paid to the fact that investments will need to be made from 2016 and the recovery in terms of reduced VAT Gap will only be realised after the system has been implemented (at the earliest in 2018 in scenario 2). This means that the total investment cost and part of the operational cost will have to be prefinanced depending on the scenario of implementation. The return will only be realised in the long run, from 2018 or, for scenario 3, from 2026.

389. Compared to the split payment model the costs incurred in the first years of implementation are higher due to the fact that investments by the taxable persons in e-invoicing are required.

[110] The base year for the NPV calculation is also 2015, so the costs and benefits are compared over the same period.

390. As stated in the previous sections, these amounts are rough estimates, based on a lot of assumptions both on the cost side and benefit side. We advise extreme caution when interpreting and analysing these results. However so, the evaluation proves that it might be worthwhile to explore the feasibility of the central VAT monitoring database model further.

391. It should be noted that the investment and operational cost may be different if the infrastructure needed to capture all the invoice and transaction details would be centralised in one EU platform instead of 27 different platforms, i.e. one for each Member State.

7.4 The data warehouse model – Central VAT monitoring through direct access by the tax authority to the VAT data warehouse of the taxable person

7.4.1 Description and scope

392. In this model, the taxable person uploads predefined transaction data structured in an agreed format into a secured VAT data warehouse maintained by the taxable person. The data to be archived in the VAT data warehouse could be based on the Standard Audit File for Tax (SAF-T) as laid down in OECD Guidance. Data should include invoice data, proof of delivery and payment data, i.e. all data needed for a VAT audit. The tax authority would be given direct access to those transaction data of a taxable person in this VAT data warehouse. If necessary, the tax authority could pull out the data as needed to perform real-time VAT monitoring and to mitigate risks of VAT fraud (*"pull-model"*). The tax authority would only have direct access to the set of data that is stored and uploaded by the taxable person into the secured VAT data warehouse either every 24 hours or upon the tax authority's request.

393. No changes are made to the VAT collection model. The possibilities for monitoring using risk indicators and intelligence systems would be made possible. In addition, swift and remote auditing and intervention would be increased.

394. A taxable person is still responsible for charging the correct amount of VAT on the invoice. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

395. The model could be used in a B2B or B2C environment. It could be made mandatory for taxable persons that are registered for VAT purposes to upload predefined transaction data into a VAT data warehouse. This model can be used in a B2B environment. It could also be used in a B2C environment if it is imposed that invoices be required for B2C transactions. The geographical scope can be domestic or cross-border. However, harmonisation at an EU level of the technical solutions will be required (see section 7.4.5).

7.4.2 Step-by-step flowchart[111]

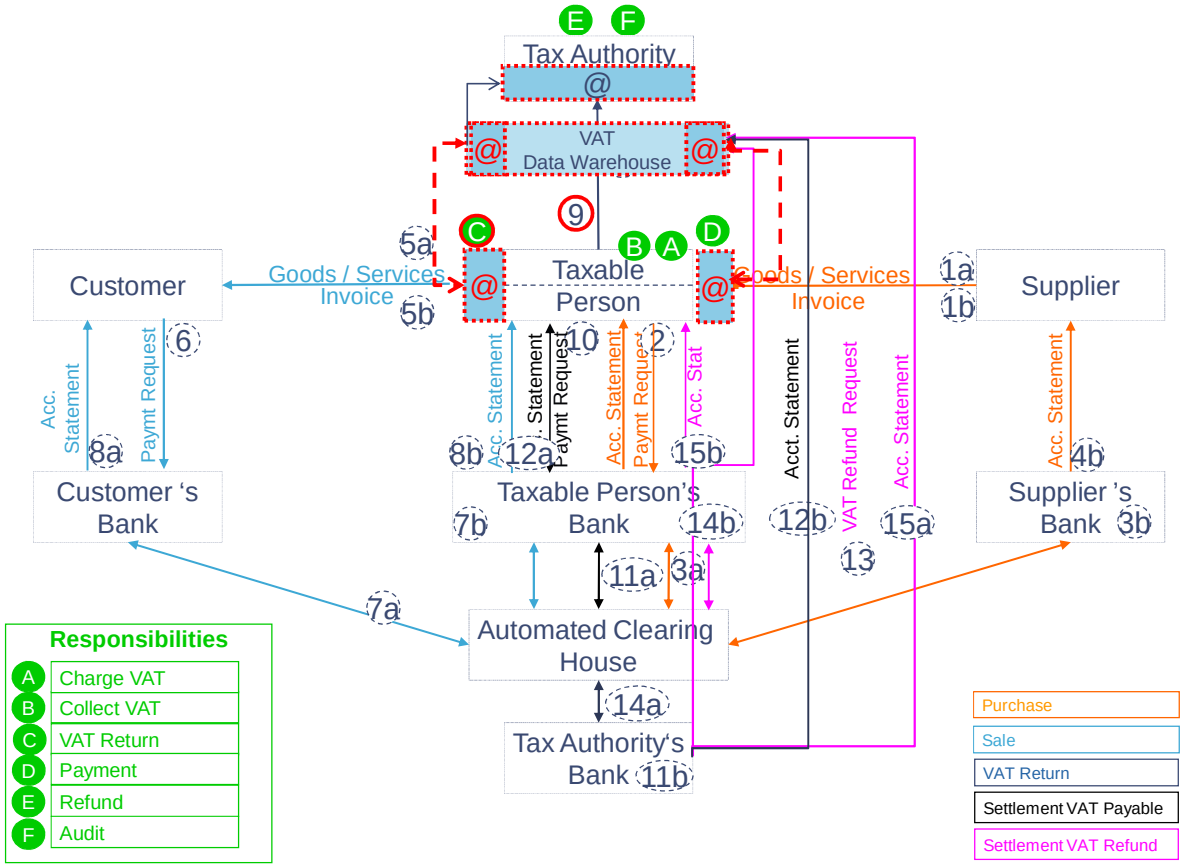


Figure 38 – The data warehouse model – Central VAT monitoring through direct access by the tax authority to the VAT data warehouse of the taxable person

7.4.3 Process description[112]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme, a *"Taxable Person"* purchases goods or services from a *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.

[111] Please note that the bold red circles are the new steps compared to the current VAT model.
[112] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.
Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting through VAT return	
Step 9[113]	*At the end of the taxable period, Taxable Person has to prepare a VAT return stating the net VAT balance and file this VAT return with Tax Authority.*
Settlement of VAT balance	
At the end of the taxable period, either Taxable Person has to pay VAT to Tax Authority or he is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.

[113] This step has changed compared to alternative 7 as described in Section 3.

Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
In this model, Tax Authority would be able, in real time, to monitor, consult and audit invoices, transactions, related payments, orders (sales and purchase orders) and related data (i.e. logistics). Tax Authority can also use risk-profiling software to identify suspicious transactions, as soon as Taxable Person has granted access to his *VAT data warehouse*[114]. Tax Authority could use these risk indicators immediately to initiate further investigations and on-site audits to stop fraudulent activities and secure collection of VAT. A refund of the net VAT balance could be refused if no access is granted or access is made difficult to Tax Authority.	

7.4.4 Roles and responsibilities

a) Definition of the roles and responsibilities grid

396. Below we define in the roles and responsibilities grid (referred to as RIL grid) the following:

- **Role:** the task to be performed;
- **Responsible:** the stakeholder who has to perform the task;
- **Informed:** the stakeholder who is kept up to date on the task;
- **Liable:** the stakeholder who will be held accountable in accordance with the VAT legislation for ensuring that the task is performed and who may incur penalties if the task is not performed.

397. Please note that the responsibility shifts and the role changes versus the current VAT model are shaded in the grid.

b) The RIL grid[115,116]

	Role	Taxable Person	Tax Authority	Taxable Person's Bank	Tax Authority's Bank
A & B	Charge VAT	Responsible Liable	Informed		
	Collect VAT	Responsible Liable	Informed		
C	Prepare and file VAT return	Responsible Liable	Informed		
D	Settlement of VAT payable	Liable Responsible	Informed		
E	Settlement of VAT refund	Informed	Responsible Liable		
F	Audit	Informed	Responsible		

Table 32 – The RIL grid for the data warehouse model

7.4.5 Sustainability of the model under different scenarios

398. We have identified a non-exhaustive list of scenarios to test the sustainability of the central VAT monitoring database model. These scenarios deal with special VAT technical situations, in which the limitations of the model are tested. Based on this scenario, it is clear that cross-border supplies will cause technical and practical issues if the model is not fully harmonised at an EU level.

399. Please see below for an explanation for each of the scenarios.

Supplies subject to local VAT to a taxable person established outside the EU and not registered in the country of supply

400. There may be a risk in terms of data protection and privacy (i.e. data leakage) for supplies subject to local VAT to a taxable person that is established outside the EU and not registered in the country of supply.

Supplies subject to local VAT to a taxable person established in another Member State and not registered in the country of supply

401. There may be a risk in terms of data protection and privacy (i.e. data leakage) for supplies subject to local VAT to a taxable person that is established in another Member State and not registered in the country of supply.

[115] Please note that the blue boxes are the new roles and responsibilities compared to the current VAT model.
[116] Please note that the first column matches with the heading of the process description.

Supplies to taxable persons that require another invoice format

402. We do not see any issues in this respect as the supplier does not have to send each single invoice to a central VAT data warehouse. However, the ERP system should have a functionality that writes booking entries (both accounts payable and accounts receivable) to a separate VAT data warehouse, which can be accessed by the tax authority at any time.

Cross-border supplies

403. If a taxable person performs a supply that takes place in the Member State of the customer, there is no particular issue with regard to the reporting. In the case, for example, of a cross-border supply of services that fall within the scope of article 44 of the VAT Directive, the supplier would book the sales invoice, and this reporting would also be included in a separate VAT data warehouse. The customer would do the same. By receiving the postings, which are performed by each party individually, instead of at the stage of the invoice, which is only issued by one party, the potential issue of cross-border supplies is overcome.

404. However, it should be noted that it is still necessary that all Member States who implement this model use the same technical format. The rationale here is that taxable persons doing business in multiple Member States should not be confronted with different technical requirements in different Member States.

Importation of goods

405. If a taxable person imports goods, in principle, no invoice needs to be issued. The importation is proven by means of an importation document. This import is also posted by the importer and thus also reflected in the separate VAT data warehouse.

Credit notes and "self-invoices"

406. We have not identified issues or benefits with regard to issuing credit notes or "*self-invoices*". This could follow the same process as the *"regular"* invoices. All these documents are booked in the ERP system and could thus be reported into a separate VAT data warehouse.

Taxable persons with a limited right to deduct VAT or invoices received on which VAT cannot be deducted

407. In the ERP system of a taxable person, the VAT deduction or portion thereof is usually immediately recorded when the booking is done (e.g. by a separate tax code or using a pro-rata). If included in the standard dataset, the correct application of the right to deduct VAT can easily be audited by the tax authority.

Bad debts

408. We have not identified any specific issues regarding bad debts.

Partial payment

409. We have not identified any specific issues regarding partial payment.

Payments in cash

410. We have not identified any specific issues regarding payments in cash.

Payments with credit cards

411. We have not identified any specific issues regarding payments with credit cards.

VAT grouping

412. We have not identified any specific issues regarding VAT grouping.

7.4.6 Reporting obligations and possibility to create a pre-filled VAT return

413. The reporting obligations of taxable persons would increase to the extent that they would have to write their booking entries to a separate VAT data warehouse.

414. The tax authority would not provide the taxable person with a pre-filled VAT return as the tax authority only "*pull*s" data out of the VAT data warehouse on a real-time or periodical basis when needed.

415. This model would also allow the tax authority to perform a risk analysis of the transactions reported.

7.4.7 Cash-flow impact

416. This model does not cause any changes in the cash-flow relating to VAT.

7.4.8 Mandatory or optional character

a) Mandatory or optional for the taxable person

417. The main disadvantage of making this model optional is the lack of effectiveness. The benefit of this model is that the tax authority can monitor and audit, in real time, all transactions reported in the separate VAT data warehouse and detect transactions at risk using defined parameters. If the model is made optional, it will significantly reduce the benefit of being able to detect transactions causing potential risks. This is because it is likely that fraudsters, causing the

VAT Gap, will not opt in and will not report transactions into a separate VAT data warehouse. Furthermore, economies of scale will only be realised if this model is used by a sufficient number of taxable persons. Therefore, making the model mandatory may be considered.

418. Consequently, in order to meet the objectives set, the model needs to be mandatory. In that regard, it is important to mention that attention needs to be paid to ensuring that the technical features and requirements of the VAT data warehouse are harmonised across the EU. Otherwise, this model will not be feasible in practice.

b) Mandatory or optional for the Member States

419. Member States should be able to make this model either mandatory or optional. However, it is important that the technical features and requirements of the VAT data warehouse are harmonised across Member States in order to reduce compliance costs and benefit from economies of scale.

7.4.9 Best practice

420. No existing best practices that are identical or similar to this model have been identified (i.e. where the tax authority can consult a data warehouse of the taxable person). However, it should be noted that Portugal and Singapore have implemented a Standard Audit File for Tax, and that ERP systems are able to export data in this standard audit file format. In this respect, we have been informed that the implementation of SAF-T in Portugal caused issues involving large sets of data and involving taxable persons who use different systems (invoice system, inventory system).

7.4.10 Quantitative assessment

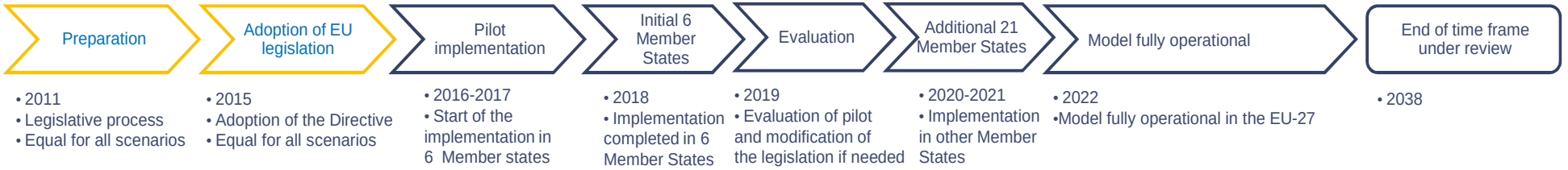
7.4.10.1 Timeline for the implementation and implementation scenarios

421. We assume that the model can also be implemented following three scenarios, comparable to the split payment model. The only difference with the split payment model is the assumption that the implementation can be completed in a shorter time frame, i.e. two year earlier than the split payment model, as it involves fewer stakeholders.

422. The time frame is presented page 209.

Implementation time frame for the data warehouse model

SCENARIO 1: 6 pilots + 21



SCENARIO 2: Big bang in 27 Member States simultaneously if needed

SCENARIO 3: Phased implementation in EU-27: 6+7+7+7

Implementation at European level

Implementation at the level of the Member States

Figure 39 – Implementation time frame data warehouse model

7.4.10.2 Specific assumptions for this model

423. Below, we make specific assumptions regarding the costs of the central VAT monitoring database model. In column 1 of the following table we identified the requirements of the model that will drive the costs. In order to quantify these requirements we first linked them to the step-by step flowchart, and then we made assumptions on comparable applications or cost drivers for the (combined) requirements. Based on the available data and by applying the Delphi-method[117] (where data is contradictory or missing) we make high level estimations on the investment and operational costs of the requirements of the model. As stated in section 6.2.3 we advise extreme caution in interpreting and analysing these cost estimations. For the general assumptions on the costs, we refer to section 6.

[117] The Delphi method is a systematic, interactive forecasting method which relies on a panel of experts. The Delphi technique, by definition, is a group process involving an interaction between the researcher and a group of identified experts on a specified topic, usually through a series of questionnaires.

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
A&B. Purchase and sale transaction					
Requirements for the VAT Data Warehouse infrastructure that the taxable person needs to make accessible to the tax authority and standard format for predefined transaction data that needs to be uploaded into this VAT Data Warehouse. The data details could be based on SAF-T. Requirements should include the remote access and security mechanisms.	1b, 5b, 9	For these combined requirements we assumed the following cost drivers are applicable: - Development of standard reporting format - Availability of remote access - Level of security - Number of messages in/out per data warehouse - Size of the messages - Frequency of remote access - Level of IT development of the taxable persons This can be compared to the implementation of SAF-T in Portugal and Luxemburg in combination with the set-up of data warehouses to allow the direct access of the Tax Authorities.	- Taxable persons need to be able to comply with the requirements of SAF-T, the Portuguese experience shows that the investment cost was high for companies with older versions of an ERP system or with legacy accounting systems. For users of newer ERP versions (such as SAP as off version R/3 4.6. C) the modifications were made by the ERP providers in order to comply with the new SAFT requirements. - The investment cost to adapt the accounting system is more material. Once the investment has been made, the accounting system supports the generation of a SAF-T-file - Taxable persons will incur an operational cost when they need to make their data available. This is comparable to the intra-community trade listing, a requirement for intra-community traders in all Member States. - We assume this will take 0,25 to 0,5 days per year per taxable person. The cost of this is determined from the benchmark study on transportation legislation in Poland and The Netherlands (2005) where it takes between 1h20 and 12h to fulfill certain information obligations costing between €125 and € 545 each time (frequency once every 5 years).	- SAF- T is a file based on XML. This format has the disadvantage that it requires quite a lot of processing capacity compared to flat ASCI files. So both the taxable person and the tax authority will need to tackle this issue. In the context of this study no extra cost was calculated for this side-effect. - The cost of adapting the system is assumed to be minimal as either the ERP system will be modified (as in Portugal). For those taxable persons that do not directly use ERP systems it will be their accountant who will make the modifications (for several taxable persons at once). - The assumptions made for the investment costs rely on the Delphi-method, the operational costs are based on the available data.	Investment cost per taxable person Min: 500 — Max: 2.500 Operational cost per taxable person Min: 125 — Max: 250
Set-up and operation of the VAT Data Warehouse.	Basic requirement of the model				
Uploading, managing and archiving the data in the VAT Data Warehouse.	1b, 5b, 9				

Table 33 – Assumptions on the investment and operational costs of the data warehouse model (part 1)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
C. VAT return (no changes to the current VAT model)					
D. Settlement of VAT payable (no changes to the current VAT model)					
E. Settlement of VAT refundable (no changes to the current VAT model)					
F. Audit					
Data mining infrastructure, business intelligence systems and risk profiling software that are able to process the data in the VAT Data Warehouse of the taxable person remotely and to detect risks and fraudulent behaviour.	In this model, Tax Authority would be able, in real time, to monitor, consult and audit invoices, transactions, related payments, orders (sales and purchase orders) and related data (i.e. logistics,...). Tax Authority would also be able to use risk profiling software to identify suspicious transactions, as soon as taxable person has granted access to his VAT data warehouse . Tax Authority could use these risk indicators immediately to initiate further investigations and on-site audits to stop fraudulent activities and secure collection of VAT. A refund of the net VAT balance could be refused if no access is granted or access is made difficult to Tax Authority.	- Interoperability with current audit systems - Number of current VAT accounts - Number of taxable periods - Size of the messages - Frequency of checks and updates - Availability of the system - Interoperability with online filing systems - Functionalities of the checks	In Portugal the Tax Authorities have invested in Computer-Assisted Audit Techniques (CAATS). The cost for 1.000 licences was approx 50.000 EUR for a limited licence for tax inspectors. 100 licences for the full version (all data mining functionalities) cost 30 000 EUR. In Portugal 1.400 tax inspectors were trained in order to use the light version of the software. 100 inspectors received an in depth training on the full version. In total we estimate that 1.600 training days were taken up during the Portuguese implementation (Interview of PwC Belgium with PwC Portugal specialized in Computer Assisted Audit Techniques, 2010).	Assumptions are made: The investment cost = model 1 (software + training) Operational cost: yearly licensing cost of 80.000-160.000 EUR per year	Investment cost per tax authority Min: 1.650.000 — Max: 4.800.000 Operational cost per Tax Authority Min: 80.000 — Max: 160.000

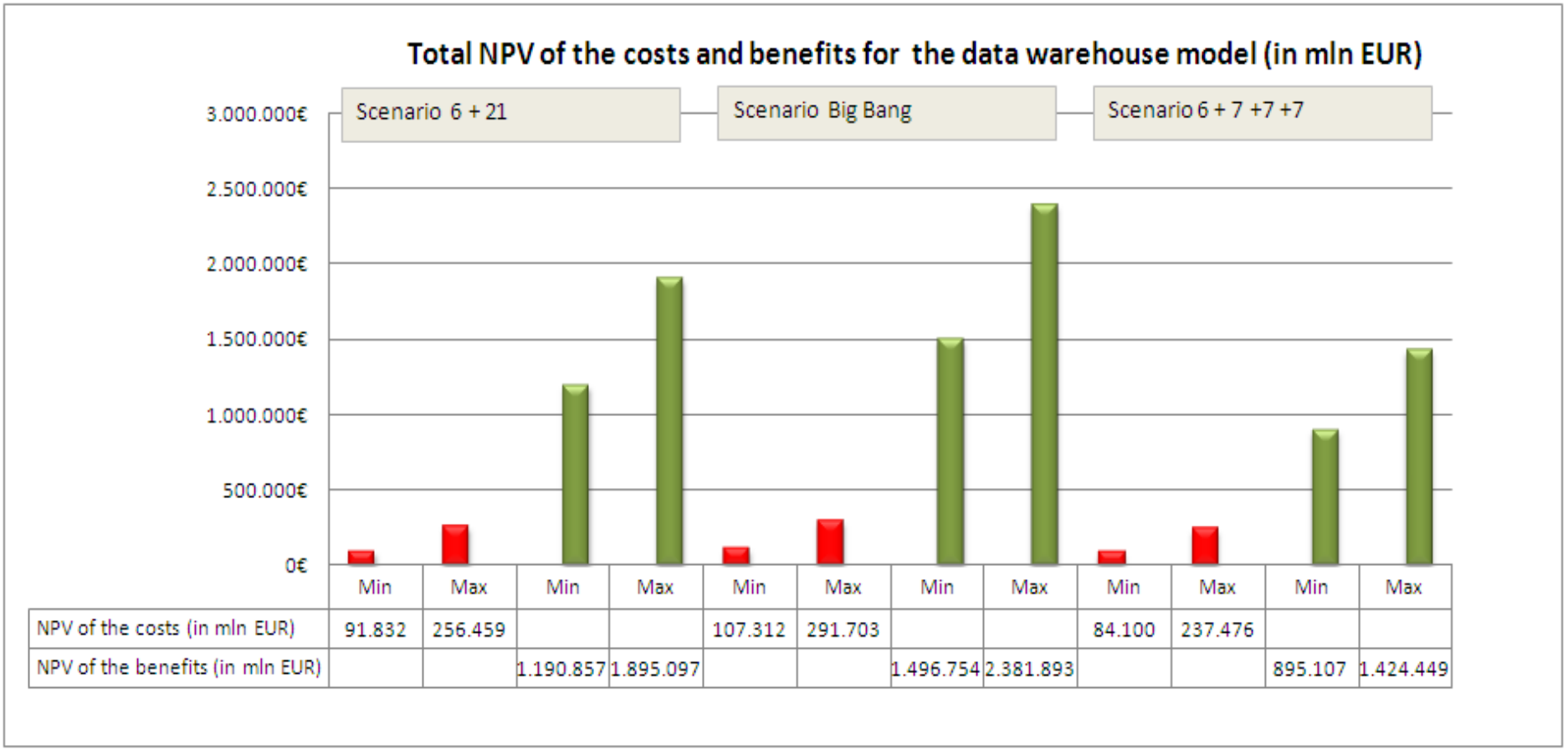
Table 34 – Assumptions on the investment and operational costs of the data warehouse model (part 2)

7.4.10.3 Cost/benefit analysis

424. The results of the cost/benefit calculations in each of the scenarios are presented in the following graphs. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. The methodology for this and more detailed calculations are given in annexes 2 and 3.

425. To have a clear view on when the actual investments need to be made and when the expected benefits[118] are first generated we also present the annual cost and benefits (until 2028) of the model for each scenario separately together with an overview all scenarios combined. As such it becomes apparent when exactly the highest costs and benefits take place. It should be noted that the costs and benefits largely depend on the way the tax authorities use this info and that for each scenario the benefits are only accounted as from the year when all Member States are fully operational within the model.

[118] The calculations of the benefits only include direct earn-back effects by improved VAT recovery (caused by the reduction of different types of VAT fraud and the reduction of non compliance). Indirect earn-back effects, such as reduction of administrative burden, have not been taken into account in the calculation as they do not represent a direct cash flow that can be used to finance the investments. Quantitative and qualitative information of indirect effects is treated separately in the text.



	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
NPV of the costs (in mln EUR)	91.832	256.459			107.312	291.703			84.100	237.476		
NPV of the benefits (in mln EUR)			1.190.857	1.895.097			1.496.754	2.381.893			895.107	1.424.449

Figure 40 – Total NPV of the costs and benefits for the data warehouse model

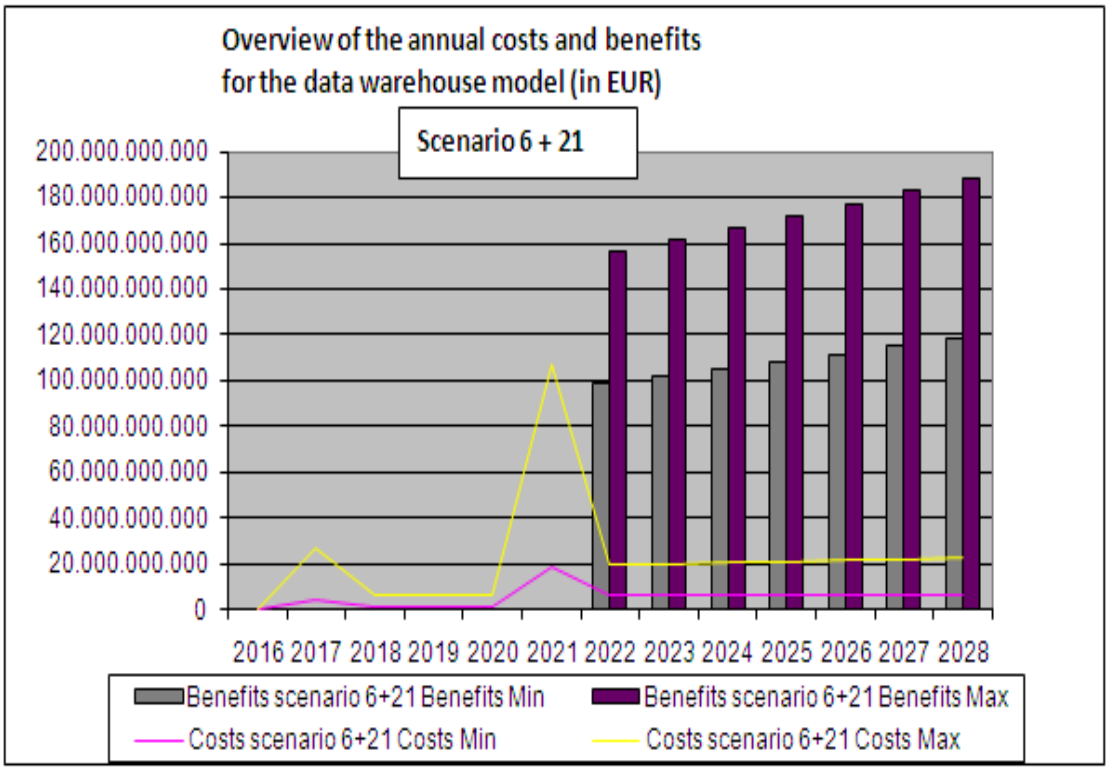


Figure 41 – Overview of the annual costs and benefits for the data warehouse model in scenario 1

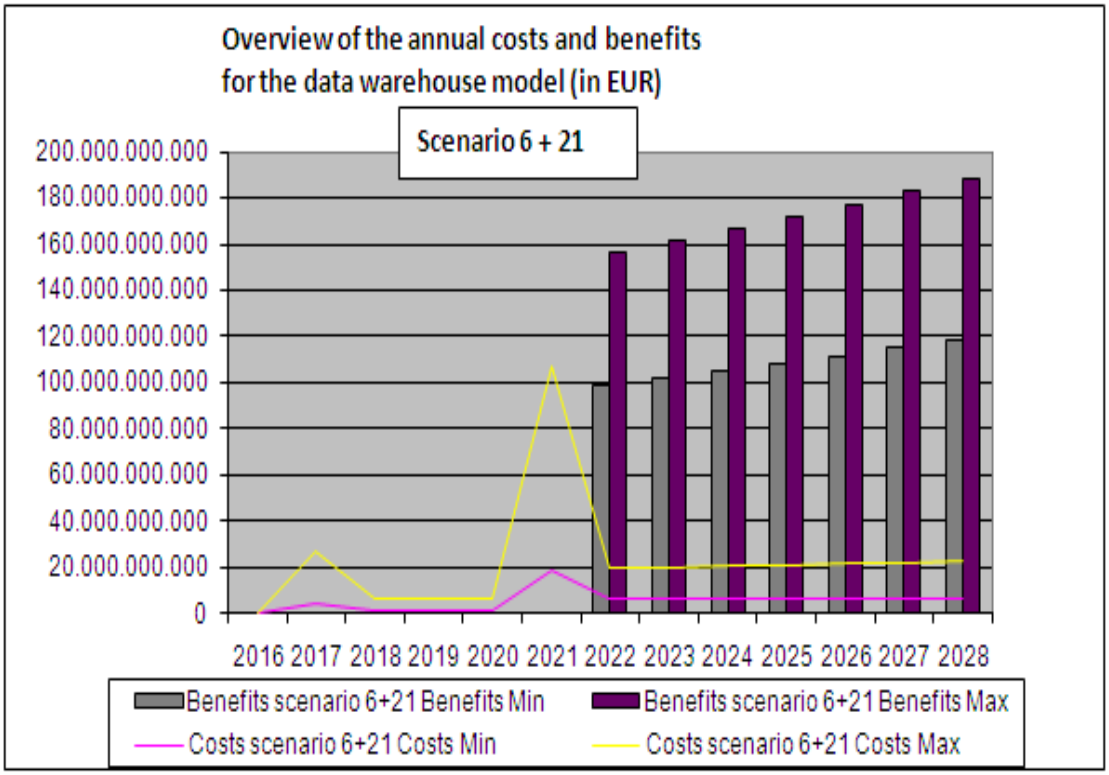


Figure 42 – Overview of the annual costs and benefits for the data warehouse model in scenario 2

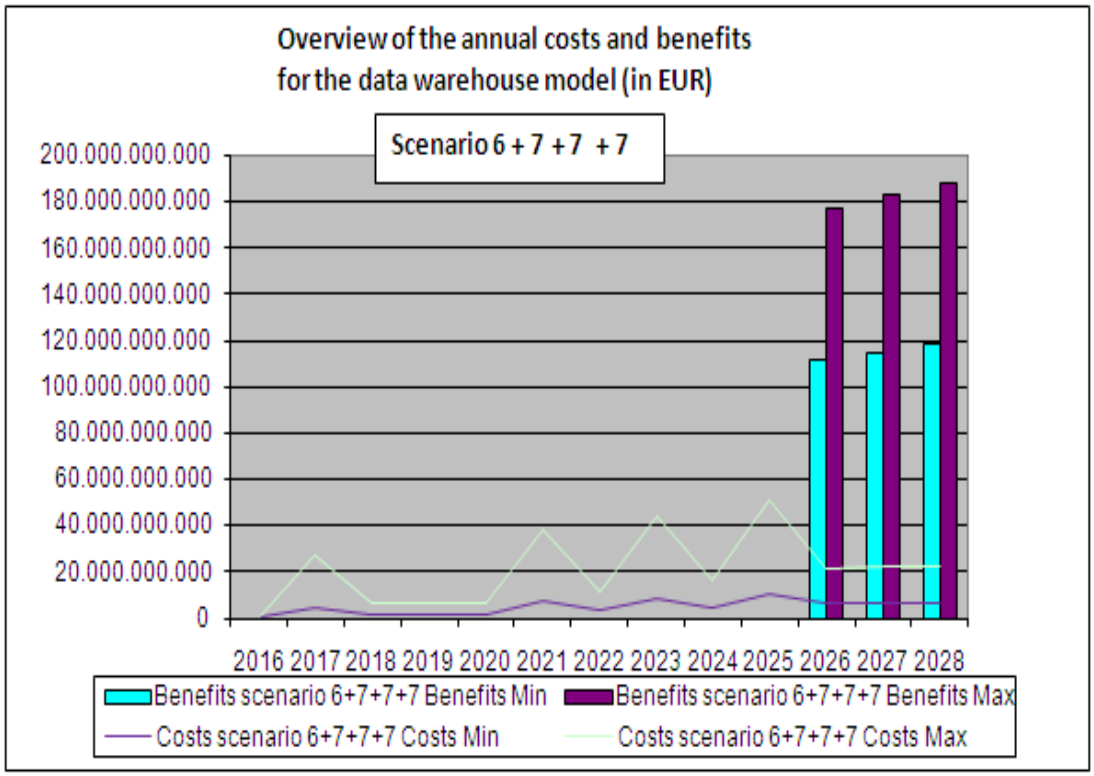


Figure 43 – Overview of the annual costs and benefits for the data warehouse model in scenario 3

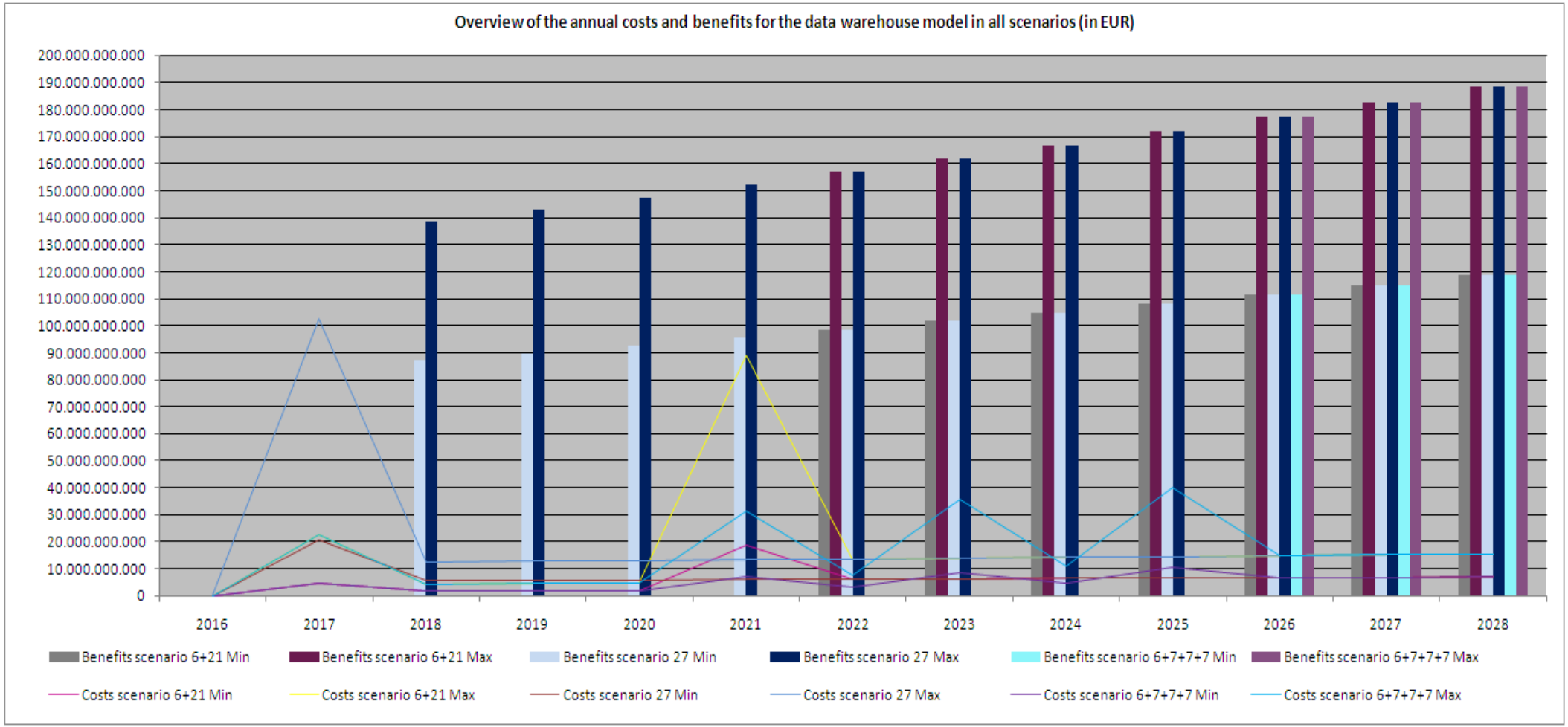


Figure 44 – Overview of the annual costs and benefits for the data warehouse model in all scenarios

7.4.10.4 Conclusions

426. The total NPV of the investment and operational costs for the time frame 2016-2038 varies between EUR 84 billion and EUR 292 billion[119]. In the worst-case scenario the NPV of the potential of the model to reduce the VAT Gap (based on the assumptions discussed in the previous section 6.3.3.3) is estimated at EUR 895 billion (gradual implementation with minimal benefits).

427. If we compare the NPV of the maximal cost[120] estimate with the NPV of the minimal return in reducing the VAT Gap, the cost recovery percentage is higher than 400% in all scenarios. We conclude that the investment and operational costs of the model are probably lower than the benefits they generate by reducing the VAT Gap.

428. The large variance between the minimal and the maximal estimated costs can be explained by the difference in starting position of the taxable persons. In an optimal setting, a taxable person has already invested in modern, integrated accounting systems that can be easily adapted to the new requirements. If, however, a taxable person uses older legacy systems or systems that are not integrated (e.g. no integration between the general ledger, the sub ledgers and e.g. the invoicing software), quite a large investment will be needed.

429. In all scenarios both the estimated costs and the estimated benefits are higher than for the split payment model and the central VAT monitoring database model. However, the cost recovery rates are comparable.

430. The graphs presenting the annual costs and benefits showed that attention has to be paid to the fact that investments will need to be made from 2016 and the recovery in terms of reduced VAT Gap will only be realised after the system has been implemented (at the earliest in 2018 in scenario 2). This means that the total investment cost and part of the operational cost will have to be prefinanced depending on the scenario of implementation. The return will only be realised in the long run, from 2018 or, for scenario 3, from 2026.

431. Similar to the central VAT monitoring database model the costs incurred in the first years of implementation are higher than in the split payment model due to the fact that investments by the taxable persons in data warehousing are required.

432. Based on these estimation we ascertain that there is a significant requirement for investments to be made by the taxable person in data warehousing. An alternative approach would be to lift the requirement of the data warehouse itself and merely require that the taxable person be able to produce a standard audit file

[119] We have used a discount rate of 4%, however please note that this discount rate could vary (e.g. technology can obsolete more quickly).
[120] The base year for the NPV calculation is also 2015, so the costs and benefits are compared over the same period.

for tax when requested for without direct access of the tax authority into a data warehouse. This alternative approach hereafter referred to as the *"limited"* data warehouse model would reduce the costs by 24 to 44% (in the big bang scenario) as presented in the figure below.

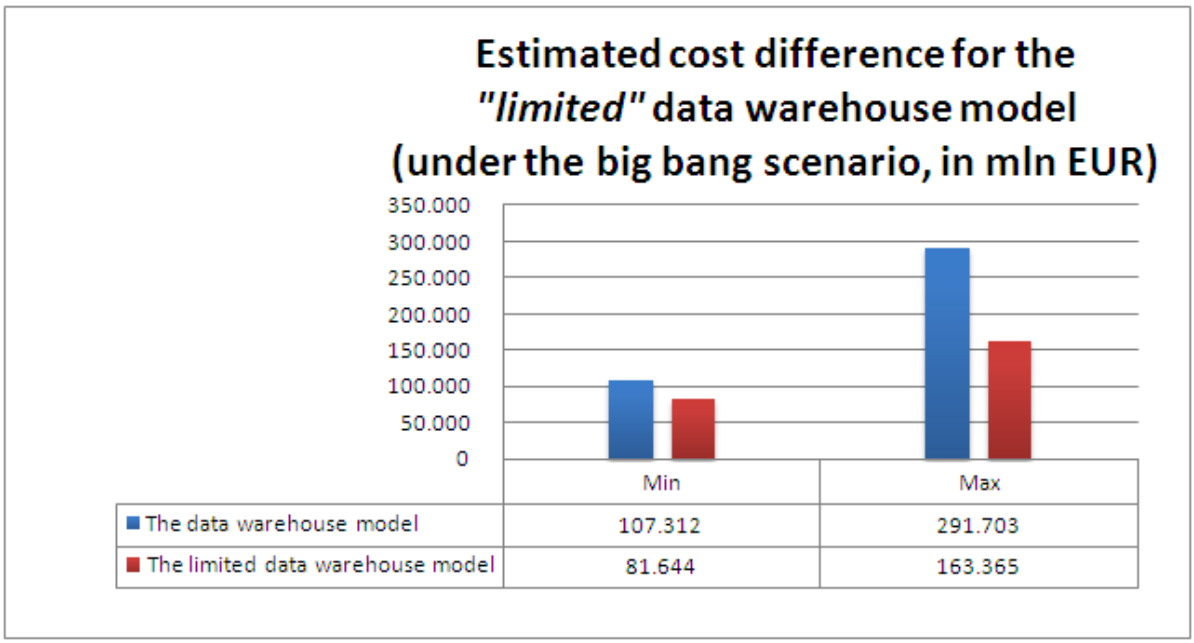


Figure 45 Estimated cost difference for the *"limited"* data warehouse model (under the big bang scenario)

433. As stated in the previous sections, these amounts are rough estimates, based on a lot of assumptions both on the cost side and benefit side. We advise extreme caution when interpreting and analysing these results. However so, the evaluation proves that it might be worthwhile to explore the feasibility of the VAT data warehouse model further.

7.5 The certified taxable person model

7.5.1 Description and scope

434. In this model, a taxable person's VAT compliance process and internal controls would be certified. In order to be certified, the taxable person should have an "*Internal Control Framework*" (ICF)[121] that includes a "*VAT Control Framework*" covering people, processes and technology (systems).

435. Due to regulatory requirements[122] and shareholder demands, modern businesses need to have an ICF in place. Additionally, in a number of countries, there are corporate governance codes and laws that place emphasis on internal control, requiring businesses to continuously monitor their risks. These frameworks enable businesses to ensure that their operating, financial and compliance objectives are met and that they provide for the proper management of risk.

436. Where an ICF is in place, the taxable person will undertake a "*self-risk assessment*" of all its control and monitor functions and will be in a position to provide a statement, known as an "*in control statement*", in relation to those functions. With an "*in control statement*", a management board affirms that it is in control of the processes taking place in its business.

437. If a taxable person is "*in control*", he should be in a position to detect and document any relevant tax risks and to report them to the tax authority, provided that specific tax requirements are incorporated into the ICF. These specific tax requirements are sometimes described as a "*Tax Control Framework*" (TCF), which focuses on the internal control of tax processes. The ability to provide an audit trail between invoices, supplies, deliveries and payments is a key element of a TCF. Another key element is the reliability of the software accounting system and processes used for handling both the sale and purchase process for VAT purposes and the VAT compliance (invoices, VAT returns and listings).

438. The taxable person should provide the tax authority with a description of, on the one hand, the main tax risks faced by the company and, on the other hand, the design and effectiveness of the internal risk management and control systems used to manage the main tax risks, during the relevant financial year.

439. If the taxable person is in a position to detect any meaningful risks and to report them to the tax authority, the role of the tax authority can change to that of assessing the monitoring system of the taxable person itself, rather than intrusive auditing.

[121] Committee of Sponsoring Organisations of the Treadway Commission (COSO), Guidance on Monitoring Internal Control Systems, www.coso.org, 2009.
[122] For example, the United States' Sarbanes-Oxley Act of 2002 imposes requirements for the establishment of internal controls by public companies.

440. Certification is only provided if the taxable person is "*in control*" and where the tax authority can audit efficiently and effectively. Certification could be performed either by the tax authority or by third parties such as the financial auditor of a company in accordance with specific certification standards. Certification could also be pushed to taxable persons that deliver an "*in control statement*".

441. Within the OECD[123], work has been performed by the informal joint working group on Tax Electronic Auditing, which is reflected in the information note on Tax Compliance and Tax Accounting Systems that has been published. It describes how tax control frameworks including systems and accounting software and the use of standard audit files for tax could enable monitoring by the tax authority and targeted auditing to improve the efficiency and effectiveness of collection and enforcement.

442. No changes are made to the VAT collection model.

443. A taxable person is still responsible for charging the correct amount of VAT on the invoice. Taxable persons are entitled to deduct VAT on goods and services they purchase in the course of their business.

444. Reference is also made to the Netherlands[124] and South Korea[125] and Singapore[126], where similar models exist.

[123] OECD, Forum on Tax Administration's General Administrative Principles: Information Note on Tax Compliance and Tax Accounting Systems, 2010, http://www.oecd.org.

[124] http://www.belastingdienst.nl

[125] http://www.nts.go.kr/eng

[126] http://www.iras.gov.sg/irasHome/page.aspx?id=9146

7.5.2 Step-by-step flowchart[127]

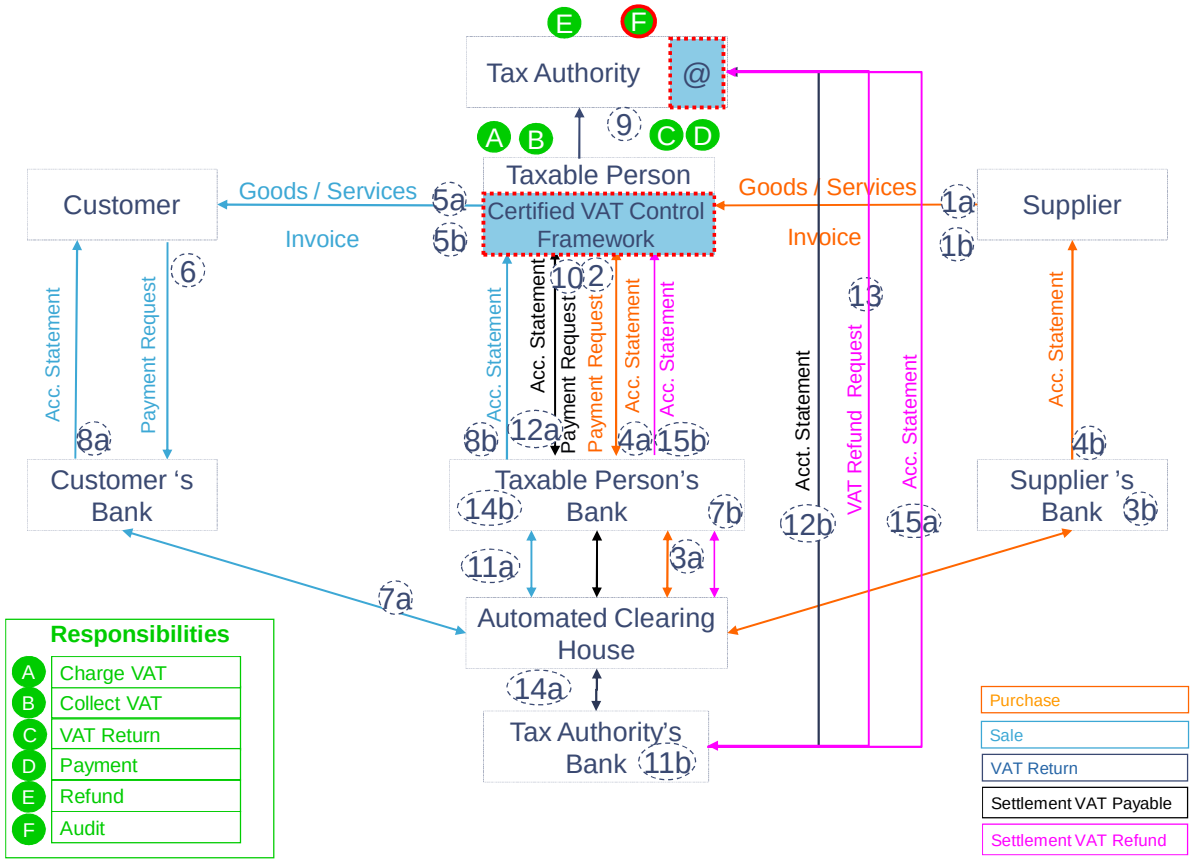


Figure 46 – The certified taxable person model

7.5.3 Process description[128]

A) Purchase transaction	
In a normal business environment, a taxable person makes purchases and sales. In this scheme, a *"Taxable Person"* purchases goods or services from a *"Supplier"*. In the framework of this transaction, the following steps are performed:	
Step 1a	Supplier delivers goods or services to Taxable Person.
Step 1b	Supplier issues an invoice to Taxable Person using Certified VAT Software, stating the taxable amount and the VAT amount.
Step 2	Taxable Person makes a payment request to Taxable Person's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 3a	Taxable Person's Bank debits Taxable Person's bank account and provides payment information to Automated Clearing House.
Step 3b	Supplier's bank account is credited with the taxable amount and the VAT amount.

[127] Please note that the bold red circles are the new steps compared to the current VAT model.
[128] Changes in the Process description compared to the Current VAT Model are highlighted in blue.

Step 4a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 4b	Supplier's Bank makes an account statement available to Supplier to inform him of receipt of the payment.
B) Sale transaction	
Subsequently, *"Taxable Person"* in turn performs a taxable supply of goods or services to *"Customer"*. In the framework of this transaction, the following steps are performed:	
Step 5a	Taxable Person delivers goods or services to Customer.
Step 5b	Taxable Person issues an invoice to Customer using Certified VAT Software, stating the taxable amount and the VAT amount.
Step 6	Customer makes a payment request to Customer's Bank for the total amount to be paid (taxable amount and VAT amount).
Step 7a	Customer's Bank debits Customer's bank account and provides payment information to Automated Clearing House.
Step 7b	Taxable Person's bank account is credited with the taxable amount and the VAT amount.
Step 8a	Customer's Bank makes an account statement available to Customer to inform him of the transfer of the money.
Step 8b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the payment.
C) Reporting through VAT return	
Step 9	At the end of the taxable period, Taxable Person has to prepare a VAT return stating the net VAT balance and subsequently file this return with Tax Authority. This VAT return would be prepared in accordance with the Certified VAT Control Framework including the processes and systems used.
Settlement of VAT balance	
At the end of the taxable period, Taxable Person either has to pay VAT to Tax Authority or is entitled to a VAT refund.	
D) Settlement of VAT payable	
Step 10	Taxable Person makes a payment request to Taxable Person's Bank for the VAT balance due.
Step 11a	Taxable Person's Bank debits Taxable Person's bank account with the VAT balance due and provides payment information to Automated Clearing House.
Step 11b	Tax Authority's bank account is credited with the VAT balance due.
Step 12a	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of the transfer of the money.
Step 12b	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of receipt of the payment.
E) Settlement of VAT refund	
Step 13	Tax Authority makes a payment request to Tax Authority's Bank for the refundable VAT balance.

Step 14a	Tax Authority's Bank debits Tax Authority's bank account with the refundable VAT balance and provides payment information to Automated Clearing House.
Step 14b	Taxable Person's bank account is credited with the refundable VAT balance.
Step 15a	Tax Authority's Bank makes an account statement available to Tax Authority to inform it of the transfer of the money.
Step 15b	Taxable Person's Bank makes an account statement available to Taxable Person to inform him of receipt of the refund.
F) Auditing	
Tax Authority could audit more efficiently and effectively, taking into account the Certified VAT Control Framework that Taxable Person has in place. It should also allow Tax Authority to easily match certain data (e.g. invoice data, delivery data and payment data). Such audit trails are part of the Certified VAT Control Framework. Tax Authority can perform an audit on the correctness of the payment and deduction of the VAT only after the transactions have taken place (*ex post*) and after the transactions have been reported (in the VAT return and/or other listings).	

7.5.4 Roles and responsibilities

a) Definition of the roles and responsibilities grid

445. Below, in the roles and responsibilities grid (referred to as RIL grid), we define the following:

- **Role:** the task to be performed;
- **Responsible:** the stakeholder who has to perform the task;
- **Informed:** the stakeholder who is kept up to date on the task;
- **Liable:** the stakeholder who will be held accountable in accordance with the VAT legislation for ensuring that the task is performed and who may incur penalties if the task is not performed.

446. Please note that the responsibility shifts and the role changes versus the current VAT model are shaded in the grid.

b) The RIL grid[129,130]

	Role	Taxable Person	Tax Authority	Taxable Person's Bank	Tax Authority's Bank
A & B	Charge VAT	Responsible Liable			
	Collect VAT	Responsible Liable			
C	Prepare and file VAT return	Responsible Liable	Informed		
D	Settlement of VAT payable	Liable Responsible	Informed		
E	Settlement of VAT refund	Informed	Responsible Liable		
F	Audit	Informed	Responsible		

Table 35 – The RIL grid for the certified taxable person model

7.5.5 Sustainability of the model under different scenarios

Supplies subject to local VAT to a taxable person established outside the EU and not registered in the country of supply

447. We have not identified any specific issues regarding supplies subject to local VAT to a taxable person that is established outside the EU and not registered in the country of supply.

Supplies subject to local VAT to a taxable person established in another Member State and not registered in the country of supply

448. We have not identified any specific issues regarding supplies subject to local VAT to a taxable person that is established in another Member State and not registered in the country of supply.

Supplies to taxable persons that require another invoice format

449. We have not identified any specific issues regarding supplies to taxable persons that require another invoice format.

Cross-border supplies

[129] Please note that the blue boxes are the new roles and responsibilities compared to the current VAT model.
[130] Please note that the first column matches with the headings of the process description.

450. We have not identified any specific issues regarding cross-border supplies.

Importation of goods

451. We have not identified any specific issues regarding importation of goods.

Credit notes and "self-invoices"

452. We have not identified any specific issues regarding credit notes and "*self-invoicing*".

Taxable persons with a limited right to deduct VAT or invoices received on which VAT cannot be deducted

453. We have not identified any specific issues regarding supplies to or by taxable persons with a limited right to deduct VAT.

Bad debts

454. We have not identified any specific issues regarding bad debts.

Partial payment

455. We have not identified any specific issues regarding partial payment.

Payments in cash

456. We have not identified any specific issues regarding payments in cash.

Payments with credit cards

457. We have not identified any specific issues regarding payments with credit cards.

VAT grouping

458. We have not identified any specific issues regarding transactions made within or with VAT groups.

7.5.6 Reporting obligations and possibility to create a pre-filled VAT return

459. Whether taxable persons opt for a "*Certified VAT control framework*" or not, the reporting obligations will remain the same. If taxable persons have a "*Certified VAT control framework*", they could benefit from being subject to fewer VAT audits.

460. In this model, the tax authority will not provide taxable persons with a pre-filled VAT return where a "*Certified VAT control framework*" has been opted for.

7.5.7 Cash-flow impact

461. This model does not cause any changes in the cash-flow relating to VAT.

7.5.8 Mandatory or optional character

a) Mandatory or optional for the taxable person

462. *The "Certified VAT control framework*" could be made either mandatory or optional for taxable persons. Taxable persons who use such a control framework will benefit from being subject to fewer VAT audits and would be able to better manage their VAT risks. However, in order to leverage benefits of this model and to benefit from economies of scale, making this model mandatory may be considered.

463. The benefit for the tax authority would be that there is more certainty with respect the process of the filing of a VAT return, and the audit process will be more efficient. Although the tax authority does not have real-time information, the certification gives a certain guarantee that the taxable person has set up sufficient VAT controls and safeguards to ensure a correct collection of VAT.

b) Mandatory or optional for the Member States

464. Member States should be able to make this model either mandatory or optional.

465. If it would, however, be mandatory and be applied in a harmonised way for all Member States, cross-border joint audits would become far more effective and efficient and taxable persons could be able to leverage on investments made to implement their tax compliance framework in one Member State by rolling it out to other Member States.

The Netherlands

466. In 2005, the Dutch tax authority started a pilot project on Horizontal Monitoring with 20 large Dutch companies, most of which are listed on stock exchanges around the globe. Horizontal Monitoring entails a new approach to the taxable person that is based on mutual understanding, transparency and trust, thereby establishing a mature and "*equal partner*" relationship between the tax authority and the taxable person. Tax issues are resolved faster in a shift from lengthy and reactive tax audits by the tax authority towards reliance on internal tax risk and control processes within the company. The outcome of the evaluation of the pilot was positive, and this approach has been rolled out to other companies (e.g. foreign or privately owned), to organisations in the public sector and to branch organisations. Companies and organisations can wait to be invited by the Dutch tax authority to enter into discussions on the application of this new approach, but taxable persons can also pro-actively approach the Dutch tax authority.

467. Horizontal monitoring is based on a gentlemen's agreement. The starting point for this agreement is that the taxable person must be able to show that the company is (getting) in control of its tax processes and relevant tax risks, i.e. the company is working towards a reliable "*Tax Control Framework*" (TCF)[131].

468. The taxable person should actively notify the tax authority of any significant issues with a potential tax risk. In principle, this has to be done on an ongoing and real-time basis. Regular meetings will be scheduled with the Dutch tax authority to discuss relevant tax matters. The Dutch tax authority accepts a so-called private space, meaning that e.g. internal deliberations and internal risk analyses will only be submitted on a voluntary basis.

469. In principle, Horizontal Monitoring should be applicable to all Dutch taxes (corporate income tax, VAT, wage tax, customs). However, the Dutch tax authority usually accepts a step-by-step approach, thus making it possible to start with a limited scope and subsequently extend that scope over a number of years.

470. Horizontal Monitoring "*compels*" the taxable person to work towards a reliable TCF. Although investments seem inevitable, a reliable TCF will help the taxable person to control its tax function. As a result, faster and more reliable tax accounting and reporting is possible with lower costs. Reliable tax positions can be reported nearly immediately after year-end.

[131] PricewaterhouseCoopers The Netherlands, Tax is a black box (2006-2009) : www.pwc.com/nl/nl/horizontaal-toezicht/een-onderzoek.jhtml

471. Relying on the TCF and the joint tax risk assessment makes that fewer tax audits are necessary, which reduces internal and external audit costs. Tax returns can be filed and settled faster, and fewer audit adjustments have to be processed[132].

7.5.10 Quantitative assessment

7.5.10.1 Timeline for the implementation and implementation scenarios

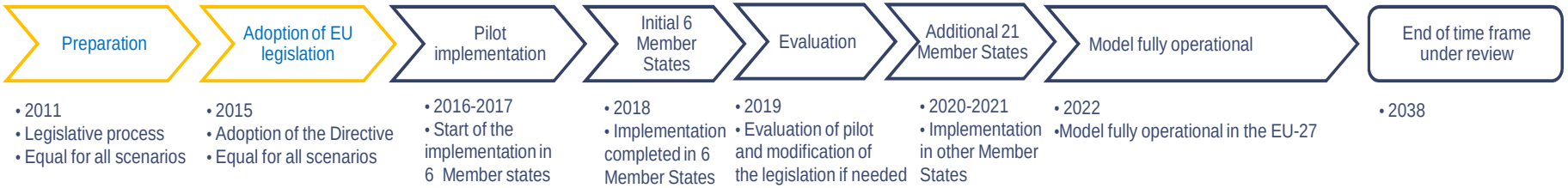
472. We assume that the model can also be implemented following three different scenarios, comparable to the split payment model. The only difference with the split payment model is the assumption that the implementation can be completed at least two years earlier than the split payment model as it involves fewer stakeholders. The time frame is presented page 231.

[132] See for instance: http://download.belastingdienst.nl/belastingdienst/docs/business_plan_2008_%202012_bjv0031z81fdeng.pdf.

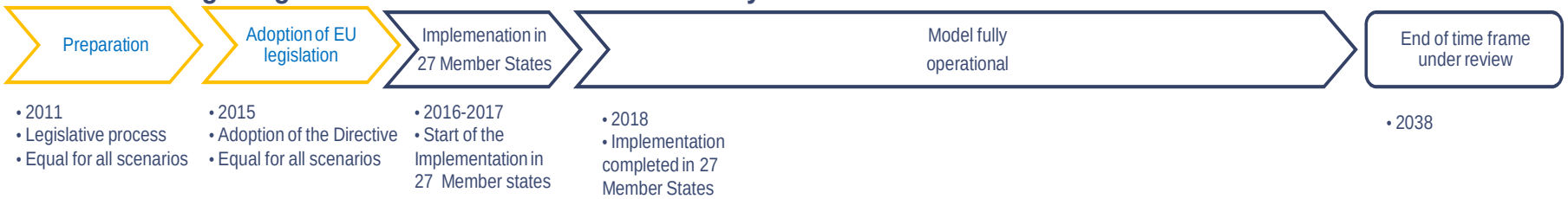
PRICEWATERHOUSECOOPERS

Implementation time frame for the certified taxable person model

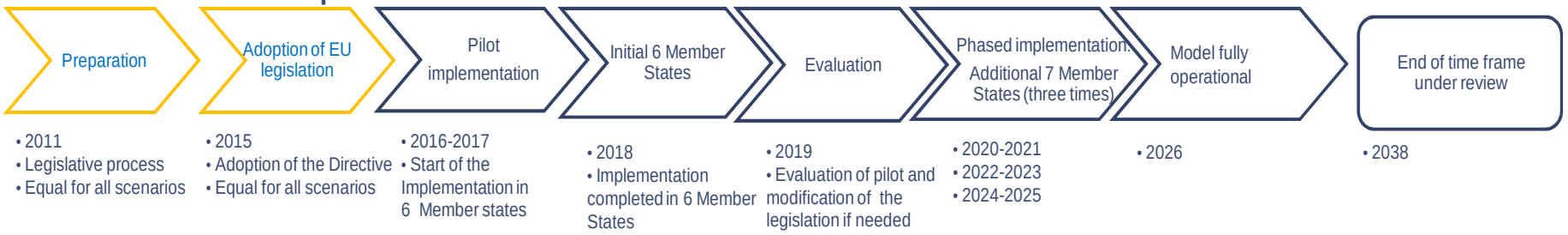
SCENARIO 1: 6 pilots + 21



SCENARIO 2: Big bang in 27 Member States simultaneously if needed



SCENARIO 3: Phased implementation in EU-27: 6+7+7+7



Implementation at European level

Implementation at the level of the Member States

Figure 47 – Implementation time frame certified taxable person model

7.5.10.2 Specific assumptions for this model

473. Below, we make specific assumptions regarding the costs of the certified taxable person model. In column 1 of the following table we identified the requirements of the model that will drive the costs. In order to quantify these requirements we first linked them to the step-by step flowchart, and then we made assumptions on comparable applications or cost drivers for the (combined) requirements. Based on the available data and by applying the Delphi-method[133] (where data is contradictory or missing) we make high level estimations on the investment and operational costs of the requirements of the model. As stated in section 6.2.3 we advise caution in interpreting and analysing these cost estimations. For the general assumptions on the costs, we refer to section 6.

[133] The Delphi method is a systematic, interactive forecasting method which relies on a panel of experts. The Delphi technique, by definition, is a group process involving an interaction between the researcher and a group of identified experts on a specified topic, usually through a series of questionnaires.

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
A&B. Purchase and sale transaction					
Use of reliable accounting system and processes for both the VAT treatment of sales and purchase transactions and the VAT compliance (invoices, VAT returns and listings).	1b, 5b, 9	- Number of taxable persons to comply - Interoperability with current accounting systems	Taxable persons need to be (en)able(d) to comply to the requirements of the accounting system. The Portuguese experience shows that the investment cost would be high for companies with older versions of an ERP system or with legacy accounting systems. For users of newer ERP versions (such as SAP as of version R/3 4.6. C) the modifications would be made by the ERP providers in order to comply with the new requirements.	- Each taxable person has different requirements and has certain accounting systems in place.	Investment cost per taxable person Min: 0 — Max: 1.250 Operational cost Min: N/A — Max: N/A
Strong audit trails between invoices, supplies, deliveries and payments.	1b, 5b, 9				
C. VAT return					
Development of a "*Tax Control Framework*" for VAT, which focuses on the internal control of tax processes.	Basic requirement of the model	The investment the taxable person will need to make in order to comply with the requirements for certified taxable persons is dependent on: - the level of centralisation and integration of the accounting ledgers - the reporting requirements the taxable person already fulfills for other legislation e.g. SOX, Customs or Excise - the maturity of the organisation: is the organisation in control? The cost will be relatively small for small businesses and larger for larger businesses with more businesses processes. On the other hand the maturity level of large businesses might be relatively higher.	Investment cost => 3.500 - 17.500 EUR Recurring operational cost => 350 - 11.250 EUR Source: PwC Belgium, expert judgement, 2010.		Investment cost per taxable person Min: 500 — Max: 1.250 Operational cost per taxable person Min: 125 — Max: 250
Performing a "self-risk assessment" and providing an "in control statement". Reporting by the taxable person on its main tax risks and on the design and effectiveness of the internal risk management and control systems used to manage the main tax risks	9				
Certification of the taxable person's VAT compliance process and internal controls.	Basic requirement of the model				

Table 36 – Assumptions on the investment and operational costs of the certified taxable person model (part 1)

Requirements driving costs	Requirements linked to the step-by-step flowchart	Assumption on comparable applications or cost drivers for the (combined) requirements	Available data	Issues	Assumptions on the investment and operating costs (in EUR)
D. Settlement of VAT payable (no changes to the current VAT model)					
E. Settlement of VAT refundable (no changes to the current VAT model)					
F. Audit					
Changes in terms of methodology, risk detection and intelligence gathering regarding VAT audits.	Tax authority could audit more efficiently and effectively, taking into account the Certified VAT Control Framework that taxable person has in place. It should also allow Tax authority to easily match certain data (e.g. invoice data, delivery data and payment data). Such audit trails are part of the Certified VAT Control Framework. Tax authority can perform an audit on the correctness of the payment and deduction of the VAT only after the transactions have taken place (ex post) and after the transactions have been reported (in the VAT return and/or other listings).	Additional training is required to adapt to the changes in terms of methodology, risk detection and intelligence gathering regarding VAT audits.	Similar as the training costs for the other models.		Investment cost per tax authority Min: 1.500.000 Max: 4.500.000

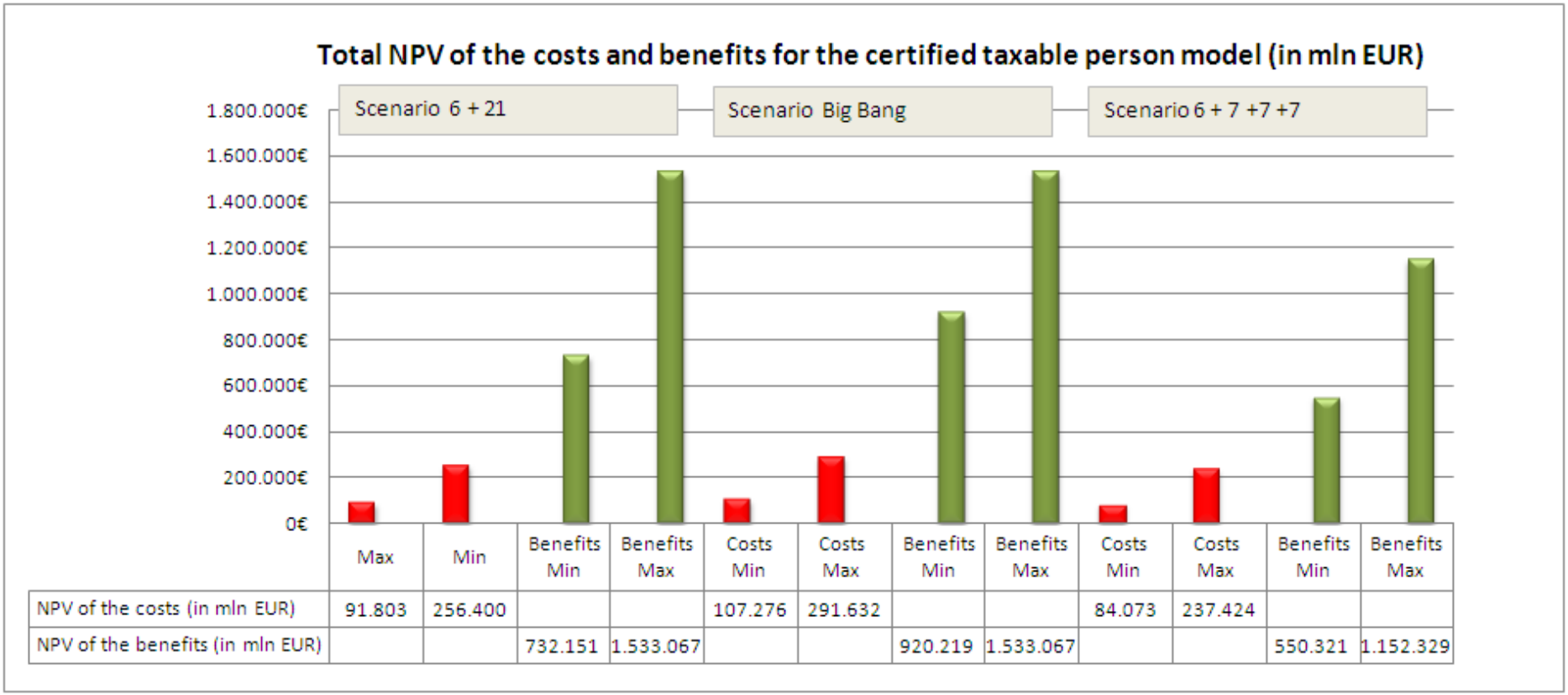
Table 37 – Assumptions on the investment and operational costs of the certified taxable person model (part 2)

7.5.10.3 Cost/benefit analysis

474. The results of the cost/benefit calculations in each of the scenarios are presented in the following graphs. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. The methodology for this and more detailed calculations are given in annexes 2 and 3.

475. To have a clear view on when the actual investments need to be made and when the expected benefits[134] are first generated we also present the annual cost and benefits (until 2028) of the model for each scenario separately together with an overview all scenarios combined. As such it becomes apparent when exactly the highest costs and benefits are realised. It should be noted that the costs and benefits largely depend on the way the tax authorities use this info and that for each scenario the benefits are only accounted as from the year in which all Member States are fully operational within the model.

[134] The calculations of the benefits only include direct earn-back effects by improved VAT recovery (caused by the reduction of different types of VAT fraud and the reduction of non compliance). Indirect earn-back effects, such as reduction of administrative burden, have not been taken into account in the calculation as they do not represent a direct cash flow that can be used to finance the investments. Quantitative and qualitative information of indirect effects is treated separately in the text.



	Max	Min	Benefits Min	Benefits Max	Costs Min	Costs Max	Benefits Min	Benefits Max	Costs Min	Costs Max	Benefits Min	Benefits Max
NPV of the costs (in mln EUR)	91.803	256.400			107.276	291.632			84.073	237.424		
NPV of the benefits (in mln EUR)			732.151	1.533.067			920.219	1.533.067			550.321	1.152.329

Figure 48 – Total NPV of the costs and benefits for the certified taxable person model

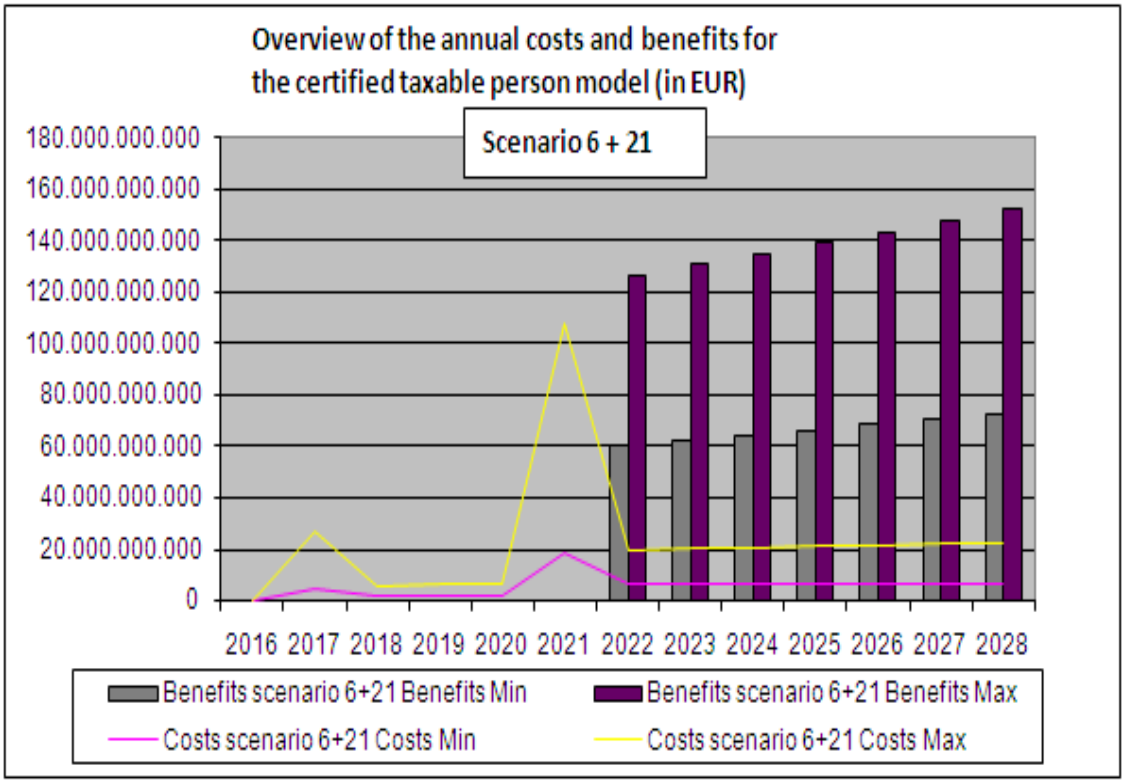


Figure 49 – Overview of the annual costs and benefits for the certified taxable person model in scenario 1

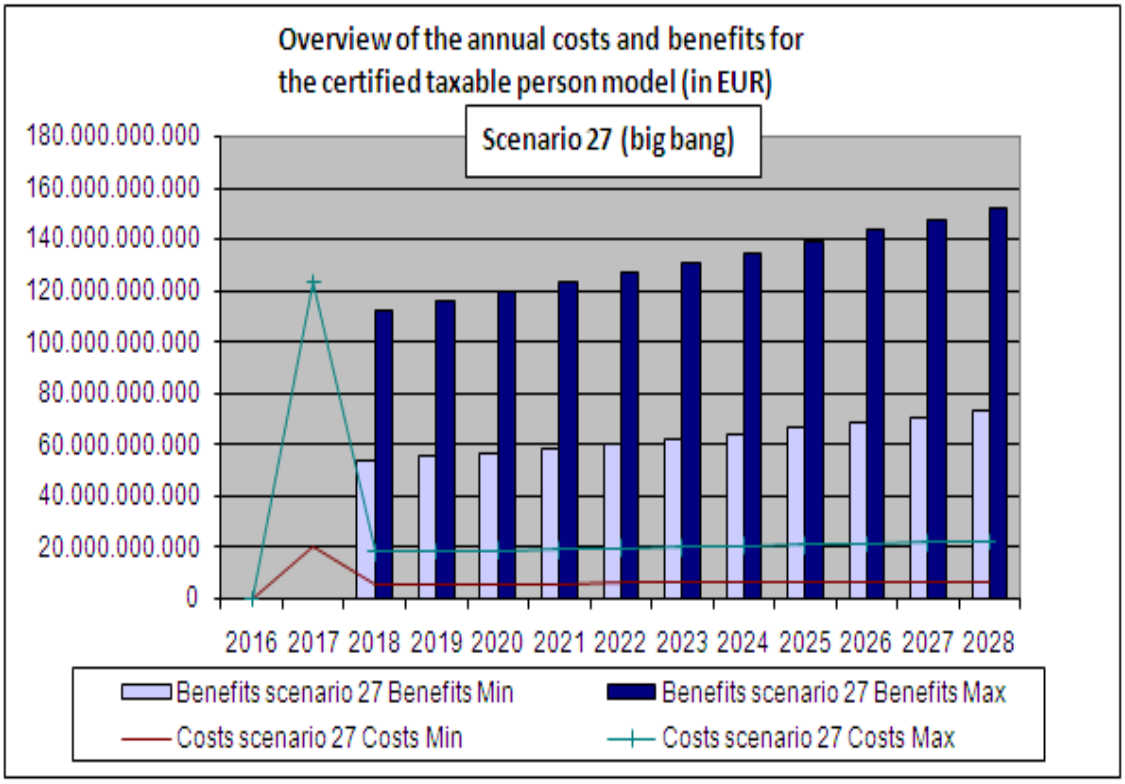


Figure 50 – Overview of the annual costs and benefits for the certified taxable person model in scenario 2

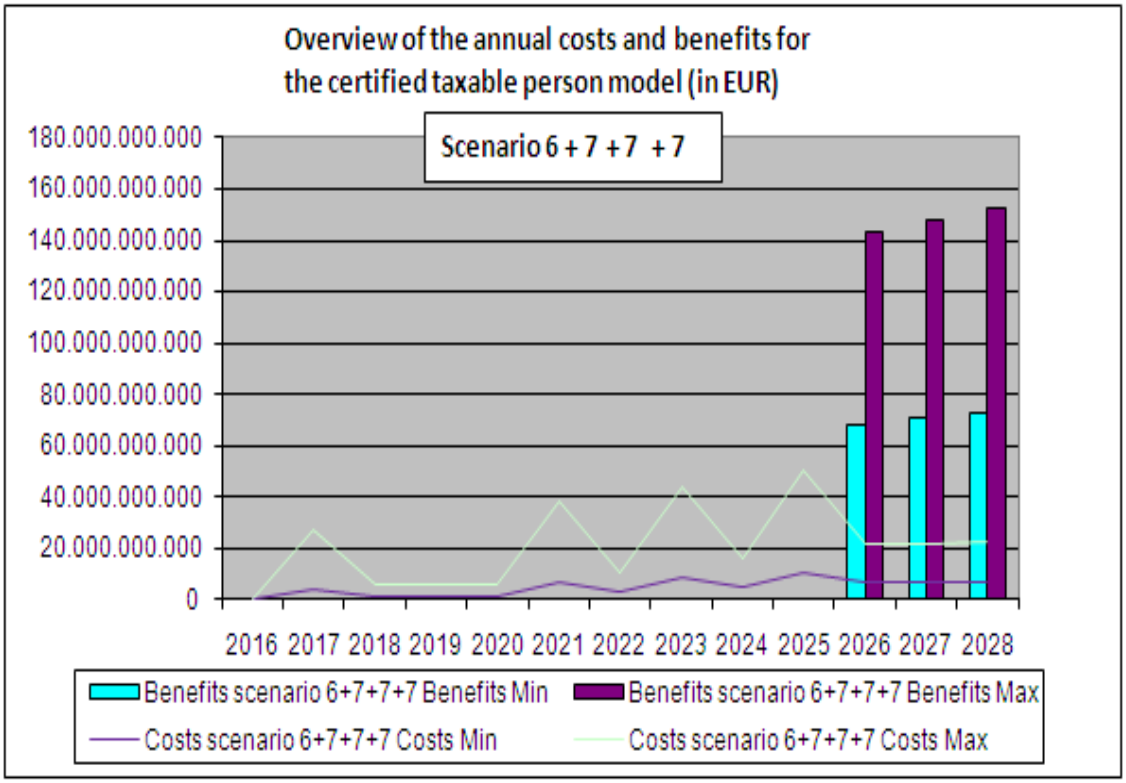


Figure 51 – Overview of the annual costs and benefits for the certified taxable person model in scenario 3

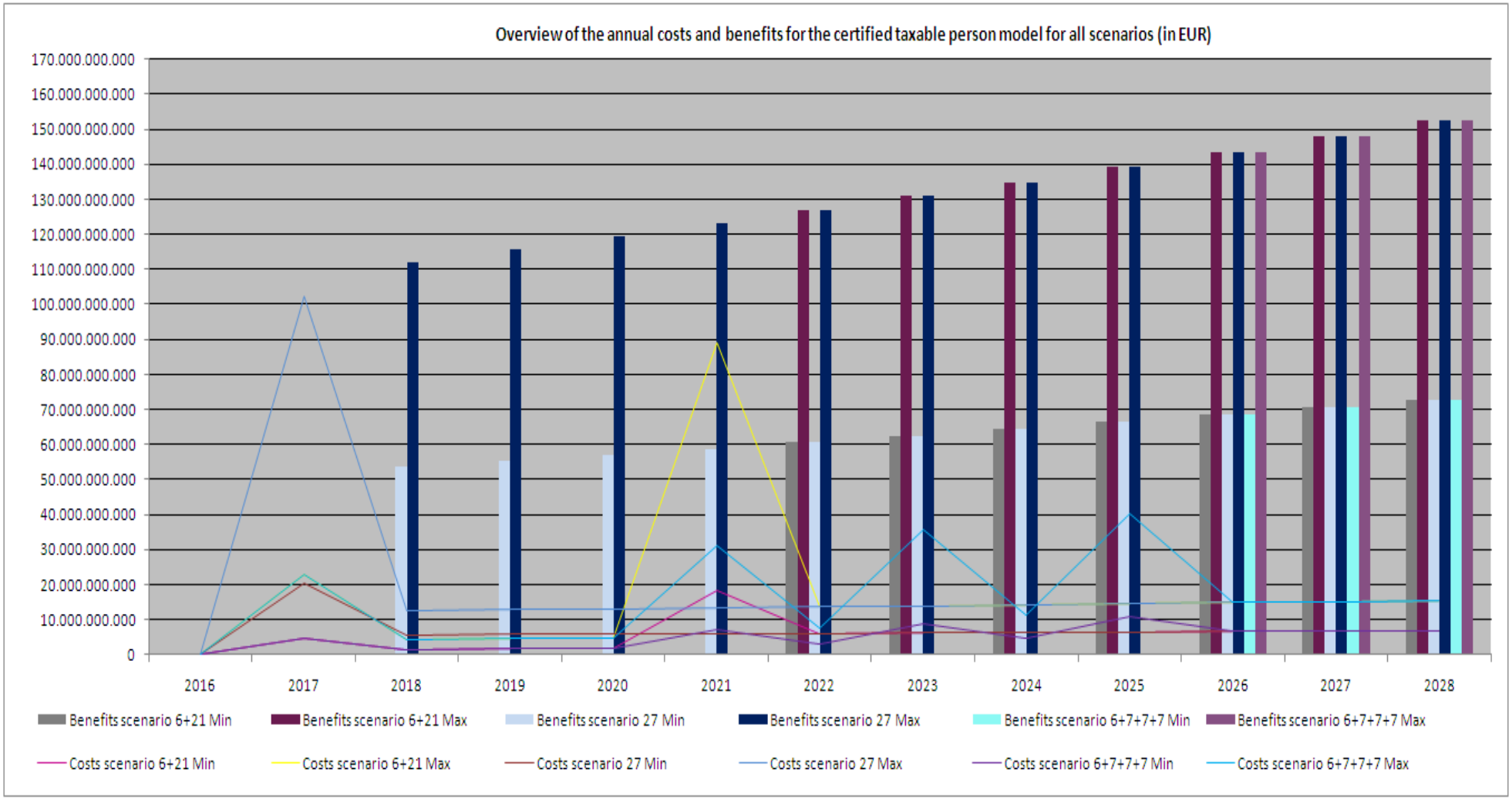


Figure 52 – Overview of the annual costs and benefits for the certified taxable person model in all scenarios

476. The total NPV of the investment and operational costs for the time frame 2016-2038 varies between EUR 84 billion and EUR 292 billion[135]. In the worst-case scenario the NPV of the potential of the model to reduce the VAT Gap (based on the assumptions discussed in the previous section 6.3.3.3) is estimated at EUR 550 billion (gradual implementation with minimal benefits).

477. If we compare the NPV of the maximal cost[136] estimate with the NPV of the minimal return in reducing the VAT Gap, the cost recovery percentage is higher than 200% in all scenarios. We conclude that the investment and operational costs of the model are probably lower than the benefits they generate by reducing the VAT Gap.

478. The variance of the NPV between the minimal and maximal cost in this model is comparable to the one in the VAT data warehouse model. Again, the investment cost will largely depend on the starting position of the taxable person. For a taxable person who has already invested in internal controls and integrated systems, the cost for implementing this model will be much lower (minimal scenarios) than for a taxable person who has not done so (maximal scenario).

479. The graphs presenting the annual costs and benefits showed that attention has to be paid to the fact that investments will need to be made from 2016 and the recovery in terms of reduced VAT Gap will only be realised after the system has been implemented (at the earliest in 2018 in scenario 2). This means that the total investment cost and part of the operational cost will have to be prefinanced depending on the scenario of implementation. The return will only be realised in the long run, from 2018 or, for scenario 3, from 2026.

480. These benefits are lower than in other models because the certification only has a preventive effect and the tax authorities will not have direct access to the VAT funds (as in the split payment model) and only receive information about sales transactions *"ex post".* On the other hand, this model can be applicable to a larger scope of taxable persons and include B2C transactions.

481. As stated in the previous sections, these amounts are rough estimates, based on a lot of assumptions both on the cost side and benefit side. We advise extreme caution when interpreting and analysing these results.

[135] We have used a discount rate of 4%, however please note that this discount rate could vary (e.g. technology can obsolete more quickly).
[136] The base year for the NPV calculation is also 2015, so the costs and benefits are compared over the same period.

However so, the evaluation proves that it might be worthwhile to explore the feasibility of the certified taxable person model further.

8 Conclusions and Recommendations

8.1 Conclusions

482. As apparent throughout our research we needed to overcome a series of issues and make a large number of assumptions in order to estimate the costs and benefits of the four selected models. In order to improve the accuracy and quality of these initial estimations, more robust data is needed. Therefore we recommend to gather robust data for at least the following elements (non-exhaustive list):

- the exact number of registered taxable persons in the EU;
- the identity of these taxable persons as to their size, revenues, and requirements for VAT purposes imposed on them (e.g. information obligations);
- the number of invoices or e-invoices in the EU-27 and the type of transaction for which the invoice is issued (e.g. B2B or B2C);
- the cost of VAT collection in each Member State;
- the amount and the components of the VAT Gap in each Member State.

483. Furthermore, we did not validate or gather data regarding costs and benefits on the basis of interviews with stakeholders. It was agreed with the Commission Steering Group that a consultation of external stakeholders was premature at this stage.[137]

484. Taking into account the data collection issues, we made rough estimates, based on a lot of assumptions both on the cost and benefit side. We advise extreme caution when interpreting and analysing the results based on these data.

485. Based on the limited data available we found that the four models under review are non-exclusive and might be combined in order to achieve the highest possible benefits in terms of reduction of the VAT Gap.

486. We estimated the total VAT Gap in 2009 in the EU-27, this amounts to EUR 118,8 billion. Based on data available at the present time, we know that, say, an overall reduction in the VAT Gap by 10% two years after implementation of a model would generate an NPV of EUR 150 billion over the period 2016-2038. This magnitude of the benefit justifies an investment in new technology and an alteration in how VAT is collected.

487. The conclusions for the four models and the rough estimations of costs and benefits are only useful in so far as:

[137] It should be noted that, at a certain point of the impact assessment, interviews may be considered: Impact Assessment Guidelines, European Commission, 15 January 2009, http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf

- the model(s) chosen is(are) obligatory for all Member States and the taxable persons. If this is not the case, it can be expected that fraudsters are likely to operate in those Member States that do not impose the model thus shifting the VAT Gap from one Member State to another. This is why in the three scenarios we only take the benefits into account as soon as the model is implemented in all 27 Member States;
- the implementation of the model (obligation, technical requirements, systems,….) is exactly the same, i.e.100% harmonised for all Member States.

8.1.1 The split payment model

488. The split payment model is a model in which the purchaser pays the VAT to a blocked VAT bank account which can only be used by the supplier for paying VAT to his suppliers' blocked VAT bank account. The advantage of this model is that, in an early stage of the VAT collection process, the VAT collected is physically transferred to a blocked VAT bank account with the tax authorities' bank. This model allows the tax authorities to monitor and block funds on the VAT bank accounts and prevent taxable persons from disappearing with VAT funds paid to them.

489. A high-level cash-flow impact assessment ascertained that clearly, for certain taxable persons, the split payment model will not have a significant impact whereas, for others, it may have a significant impact. However, a negative effect may be compensated partially if the tax authority would refund VAT much quicker than under the current VAT model and by reducing some compliance costs by providing a pre-filled VAT return for taxable persons with a blocked VAT bank account.

490. The benefits of the model are great, as the tax authority can be sure that it will receive all the VAT collected on B2B transactions. This benefit will, however, only realised to its fullest extent, if the model is made mandatory, the chargeable event is for all supplies always at the time of payment and a large number of B2B transactions are settled using electronic funds transfer (EFT). It is currently unknown how many B2B payments are settled using EFT versus in cash or with credit or debit cards. If additional research shows that a large number of transactions are paid using credit or debit cards, or even cash, the benefits will dwindle and additional evasion could arise by businesses that start using alternative payment channels instead of EFT.

491. The model requires a high initial investment and a longer implementation phase as banks will have to adapt their payment facilities, such as online banking programs. According to the implementation time frame the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2020. The impact of this model is comparable to the implementation of the SEPA regulation throughout Europe.

492. In this model there is a limited direct investment required by the taxable person. There is however a considerable operational costs as the taxable person needs to

manage this additional blocked VAT bank account. Apart from investments by taxable persons' banks plus the additional clearing costs that will arise for each payment, the model also requires a large investment programme by the tax authorities' banks, which will be in charge of managing the blocked VAT accounts, and by the tax authorities themselves, who will have to monitor each taxable person's VAT current account and (possibly) generate pre-filled VAT returns.

493. The costs of these kinds of applications will vary from Member State to Member State as the requirements will depend on the maturity of existing technology, the required level of integration with other legacy systems and the level of decentralisation of the tax authority in question.

494. Under the big bang scenario the minimal NPV of the split payment model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs is estimated to be EUR 966 billion.

495. The cost/benefit analysis shows that this model has a high minimal cost, which is mainly caused by the requisite level of investment, and a relatively low maximal cost, as there are no additional investments to be made as soon as the system is up and running (unlike the other models which require investments across the time frame per additional taxable person).

496. An issue which needs to be addressed when moving forward with the split payment model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the banks and taxable persons when implementing the model. In this view the support would translate the potential benefit to the tax authority into incentives for the taxable person and the banks in order to smoothen the implementation process.

8.1.2 The central VAT monitoring database model

497. This model can only work if e-invoicing is made obligatory for B2B transactions[138] and if the data contained in e-invoices is actively mined by the tax authorities. The main cost component of this model is the investment by taxable persons to change from paper invoicing to e-invoicing. Additional operational costs will include the cost of the data transfers to the central VAT monitoring database and the cost of maintaining and mining large volumes of data by the tax authorities. According to the implementation time frame the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2018.

498. One benefit of this model is that the tax authorities gain access to information on sales transactions at a very early stage, i.e. at the time the invoice is issued.

[138] It may be envisaged to also include (certain) B2C transactions. However, the impact of such an enlargement of scope has not been assessed in this Study.

However, the tax authority will not be able to block VAT at the time of payment, as it could in the split payment model. Hence, the recovery rate in cases of detected VAT fraud is not always guaranteed.

499. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the central VAT monitoring database model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs tis estimated to be EUR 788 billion.

500. An issue which needs to be addressed when moving forward with the central VAT monitoring database model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the taxable persons when implementing the model. In this view the support would translate the potential benefit into incentives (e.g. subsidies to invest in technology) in order to smoothen the implementation process.

8.1.3 The data warehouse model

501. The data warehouse model requires two initial investments by the taxable person: the accounting system needs to be able to generate a standard audit file for tax and the data in that file needs to be stored in a data warehouse that can be accessed by the tax authorities. This model has already (partially) been implemented in some Member States. The use, format and data elements have been defined in OECD Guidance.[139] Experience in these Member States shows that the first type of investment is limited, as most suppliers of accounting software adapt their applications to comply with the requirement of generating a standard audit file for tax purposes. Implementing data warehouses by each taxable person would, however, require a large-scale investment. According to the implementation time frame the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2018.

502. The benefits of this model are greater than those with the split payment model and the central VAT monitoring database model as it also allows monitoring of B2B and B2C transactions. All activities (sales, invoices, payments) within an entire sector and supply chain can be audited.

503. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the data warehouse model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs amounts to EUR 1.389 billion.

[139] OECD, Guidance for the Standard Audit File – Tax, April 2010, http://www.oecd.org/dataoecd/42/35/45045602.pdf

504. Nonetheless, the level of investment is considerable. There are different ways to reduce those costs. The first solution could be that the data needed would not have to be made accessible in a data warehouse, but the authorities could, at any time or on a periodic basis (e.g. once a year), request to be provided with the standard audit file.

505. The minimal cost could be reduced from EUR 107 billion to EUR 82 billion and the maximal cost could be reduced from EUR 292 billion to EUR 163 billion, as presented in the following figure. Taking into account our above assumptions, this could mean a cost reduction of respectively 24% and 44% .

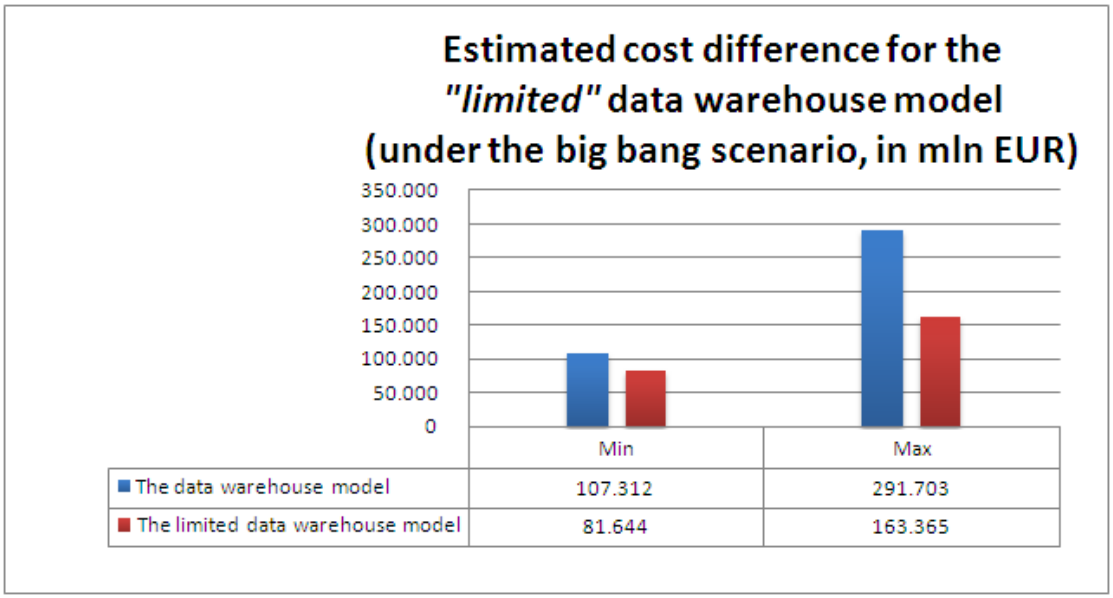


Figure 53 Estimated cost difference for the limited data warehouse model

506. A second solution that could be combined with the first one, would be to require a data warehouse only from certain segments of taxable persons (e.g. those that require closer monitoring and auditing due to their fraud-risk profile).

507. An issue which needs to be addressed when moving forward with the data warehouse model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the taxable persons when implementing the model. In this view the support would translate the potential benefit into incentives (e.g. subsidies to invest in technology) in order to smoothen the implementation process.

8.1.4 The certified taxable person model

508. Under this model, the taxable person needs to comply with the requirements for certification and invest in an internal control system. The model requires limited investment for taxable persons whose VAT accounting systems have been approved

and authorised by the tax authorities and/or that already comply with other legislation that poses similar requirements, such as Sarbanes-Oxley. The benefit of the model is additional assurance that taxable persons use compliant systems and that the risk level diminishes. This could offer opportunities to target audit efforts on segments of taxable persons that pose a higher risk. The benefit in terms of reduction of the VAT Gap is lower than in the other models. According to the implementation time frame the timing of the costs and benefits will differ. Under a big bang scenario the implementation could be complete in the year 2018.

509. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. Under the big bang scenario the minimal NPV of the certified taxable person model, in terms of the expected VAT Gap reduction minus the estimated investment and operational costs to EUR 813 billion.

510. An issue which needs to be addressed when moving forward with the certified taxable person model is who will bear the costs. As the benefit of a VAT Gap reduction is mostly in the interest of the tax authority it raises the question whether certain incentives should be considered to support the taxable persons when implementing the model. In this view the support would translate the potential benefit into incentives (e.g. subsidies to invest in technology) in order to smoothen the implementation process.

8.1.5 Comparative conclusions related to the costs

511. We calculated the NPV in 2015 (before the first year of investment) of the costs and benefits in each scenario for the entire time frame 2016-2038. In order to draw some comparative conclusions related to the costs and benefits we present the minimal estimations under scenario 2 for all four models + the combination of the split payment model with a “limited” data warehouse model. We make an attempt to interpret these estimates relating them to the stakeholders (tax authority, taxable person and the banks).

Scenario 2 (minimal estimates) NPV in million EUR	The split payment model	The central VAT monitoring database model	The data warehouse model	The certified taxable person model	Combination of the split payment model and the *"limited"* data warehouse model
NPV of the estimated VAT Gap reduction potential	1.091.250	867.853	1.496.754	920.219	1.782.627
NPV of the estimated investment costs	5.165	13.385	25.752	25.744	5.249
NPV of the estimated operational costs	120.521	66.263	81.560	81.532	202.081
NPV of the estimated benefits minus the costs	**965.565**	**788.205**	**1.389.442**	**812.943**	**1.575.297**

Table 38 - Minimal cost estimations for all models

512. If one compares the minimal investment and operational costs for all models under scenario 2 (big bang), the following conclusions can be drawn:

- for the split payment model the largest part of the investment is the change needed in the banking industry to allow for the changes that a split payment requires. The operational cost is a burden which appears to fall onto the taxable persons as they incur a burden in managing the blocked VAT bank account. The tax authority appears to enjoy most of the benefits (the reduction of VAT Gap), without bearing significant investment costs. We remind the fact that the taxable person may also enjoy the benefit of receiving a pre-filled VAT return or of quicker VAT refunds (and some taxable persons may enjoy a cash-flow benefit). However, these are benefits which we have not been able to quantify as there is no sufficient data available and as these benefits will vary from taxable person to taxable person (e.g. because a lot of taxable person will have to make important amendments to the pre-filled VAT return);

- whereas the split payment model is the model that would entail the most fundamental change to the current VAT collection. It is clear that, compared to the other models, the investment costs are not significantly high. The main reason is that in the split payment model, there is no investment cost directly in the hands of the taxable persons (although as stated, the question remains who will eventually bear the costs). Given the estimated number of taxable persons in the EU (about 35 million), any model that triggers substantial costs in the hands of the taxable persons, will have a substantial aggregate cost. We estimated the investment cost for modifying the banking software to have a NPV of between approximately EUR 4 and 7,5 billion. The same number is obtained if a taxable person has to make an investment

with a NPV of EUR 114 to 214. It is clear that implementing an e-invoicing solution, a data warehouse solution or a certification process will cost more than EUR 114 to 214. This drives up the costs for these models. It should be noted that we have foreseen operational costs in the hands of the taxable person to set up and manage the blocked VAT account. These costs may vary on the specific features of the model. However, this is true for every other model described above. Finally, it should be noted that the split payment model may have a cash-flow impact on certain taxable persons. It is important to further analyse all aspects of this cash-flow impact in order to ascertain that certain taxable persons are not confronted with significant pre-financing costs;

- for the central VAT monitoring database model the largest part of the investment relates to the changes taxable persons will have to make to their invoicing system to deal with the requirements set for to send their invoices electronically. These taxable persons will equally enjoy the benefits of e-invoicing which may be substantially higher than the initial investments (especially on the long run). However, this benefit is not quantified because it is not clear which requirements will be imposed on taxable persons and because this benefit is not a 'real' benefit related to the model. Indeed, taxable person can currently decide to implement e-invoicing and realise benefits related to e-invoicing. Imposing a new model will, even for taxable persons who have already implemented an e-invoicing solution, create additional costs. For these taxable persons, there would clearly not be an additional benefit. Furthermore, equal to the split payment model, may also enjoy the benefit of receiving a pre-filled VAT return. However, this is a benefit which we have not been able to quantify as there is no sufficient data available and as the benefit will vary from taxable person to taxable person (because a lot of taxable person will have to make important amendments to the pre-filled VAT return). Finally, the tax authority appears to have an important investment cost, but relatively low operational costs;

- the costs for the data warehouse model and the certified taxable person model are very similar. However, there is a clear difference in the breakdown of the costs. The data warehouse model contains a cost element of making the data available in a data warehouse (which would require significant investment costs) and a cost element for creating a standard audit file (which is likely to be embedded in the accounting software. The certified taxable person model has no such split. Both require substantial initial investment by the taxable persons to comply with the model. However unlike for the central VAT monitoring database model(which is a "push-model") the taxable persons will not enjoy the benefits of a pre-filled VAT return (data is not "pulled" by the tax authority for all taxable persons at the same frequency as VAT returns need to be filed). As for the tax authority the investment and operational costs appear to be minimal compared to the potential benefits in reduction of the VAT Gap.

8.1.6 Overall conclusions related to the benefits

513. A couple of conclusions can be drawn from comparing the minimal benefits for all models under scenario 2 (big bang).

- the data warehouse model has the highest estimated benefits as it includes all the transactions by all the taxable persons (B2B and B2C) and would allow for nearly real time auditing. When tax authorities can efficiently audit these transactions timely the potential benefits are larger than for the split payment model and the central VAT monitoring database model as these models only have the B2B transactions in scope;
- the split payment model requires a longer time to become fully operational. Hence the benefits are only accounted from 2020 onwards;
- the certified taxable person model has the lowest benefits of the four models because of its limited capability to reduce missing trader intra-Community fraud and other components of the VAT Gap (e.g. insolvencies).

8.1.7 General Conclusion

514. The way the actual costs and benefits will turn out, will strongly depend on the way a model is implemented by the Member States (as apparent when comparing the results per implementation scenario for each model). The implementation in all Member States with full harmonisation and cooperation between Member States are key to achieve the effectiveness of each model as the VAT Gap is not only dependent on local measures but also on how the fraud is tackled across the Member States (as apparent for missing-trade intra-Community fraud).

515. One model of itself will not effectively close the VAT Gap. This is because not all the models apply to all taxable persons and to both B2B and B2C transactions and in no model is it possible to monitor all transactions and take action in real-time. Some of the models have shown themselves to be potentially effective for parts of the VAT Gap. A final conclusion in this area will require further detailed analysis of the VAT Gap and greater study of the cause-and-effect relationship between certain types of transactions and businesses. From this Study, we can conclude that a combination of models that tackles both tracing transactions on a real-time or nearly real-time basis (data warehouse model) and offers the ability to block funds for some transactions (split payment model) offers the greatest prospects of success. Additional assurance can be gained from further monitoring transactions and enhanced control requirements (e.g. by means of certification requirements for certain types of businesses).

8.2 **Recommendations**

8.2.1 Overall recommendation

516. Based on our Study it appears that a combination of the split payment model with a limited version of the data warehouse model as described above (hereafter referred to as the *"limited*" data warehouse model), i.e. a model where data is produced in a standard format but without direct access in a data warehouse, offers the best combination in reducing the VAT Gap while keeping the estimated costs as low as possible.

517. The split payment model reduces the VAT Gap by intervening in the payment and collection cycle, which is the most effective way to ensure that VAT is paid. The disadvantage of the split payment model, however, is its *"limited"* scope (i.e. electronic funds transfer for B2B transactions). Furthermore, the split payment model may have a couple of other shortcomings relating to the cash-flow impact and the difference between the time of payment and the time VAT becomes due. The potential cash-flow disadvantage and mismatch between the VAT payment between parties and the moment VAT becomes due could be overcome by making VAT due at the moment the payment is received. However, as this is a fundamental principle of the VAT system this has not been further investigated in the Study. The disadvantage of the limited scope however, is overcome in the data warehouse model. By having access to a full set of data, the tax authority is able to monitor a full supply chain (both B2B and B2C transactions and both cash, EFT and credit or debit card payments) and detect patterns that could create a VAT Gap (e.g. threshold fraud by customers). The main disadvantage of the data warehouse model is the cost of keeping a data warehouse accessible at all times. In order to limit these costs, it may be envisaged to eliminate the data warehouse requirement and require that the standard audit file is available on simple request by the tax authorities. This *"limited"* data warehouse model could be implemented in all Member States as from 2018 thus already producing its benefits from that time. It could then be complemented with the split payment model that could be operational under the big bang scenario as from 2020. This will not allow the tax authorities to perform audits on a real time basis. However, this disadvantage may be partially off-set by robust audit methodologies and risk profiling by the tax authority allowing them to identify high-risk taxpayers who would be required to provide the data within short time frames (close to real time audit).

Calculations for a combination of the split payment model and the *"limited"* data warehouse model	Scenario 2 NPV (in mln EUR)	
	Min	Max
NPV of the estimated combined VAT Gap reduction potential[140]	1.782.627	2.391.436
NPV of the estimated costs of the split payment model	125.686	190.146
NPV of the estimated costs of the "limited" data warehouse model	81.644	163.365

[140] Estimated combined VAT Gap reduction potential for the combined models (split payment model and *"limited" data warehouse model":* the highest potential from the two models was selected for each VAT Gap component.

NPV of the benefits minus the costs for the combined models	1.575.297	2.037.924

Table 39 - Combination of the split payment model with the "limited" data warehouse model

518. Finally it should be noted that, in this combination, a couple of benefits for the taxable persons may be created. As mentioned in our Study, the split payment model may allow for a pre-filled VAT return, which will be beneficial for some taxable persons. Additionally, it may be envisaged to eliminate certain listing requirements (e.g. yearly client listing, yearly consolidated VAT return) if the tax authorities are provided with a standard audit file for tax. This file will give the tax authorities much greater audit opportunities than some of the required listings and thus it may not be useful anymore to impose these compliance obligations. Finally, it may be envisaged to refund VAT quicker if taxable persons comply with certain requirements of the (combined) model.

519. A combination of the split payment model with the central VAT monitoring database model will also increase the possible reduction of the VAT Gap. However, there are two important downsides compared to the first combination. Firstly, the combination of the split payment model and the central VAT monitoring database has a more limited scope than the combination of the split payment model and the data warehouse model. Indeed, the central VAT monitoring database would be applicable to all situations in which an invoice is issued. This is primarily obligatory for B2B transactions. Although this is a broader scope than the B2B transactions paid for by EFT, it still does not allow a tax authority to monitor B2C transactions for which no invoice is issued.
Secondly, there is no potential to reduce costs related to the central VAT monitoring database and there do not seem to be cost reductions related to combining the split payment model and the central VAT monitoring database. Indeed, the cost of implementing an e-invoicing platform cannot be broken up like the cost for creating and storing a standard audit file. Furthermore, the cost of the split payment model is primarily linked to investments and operational costs with the banking industry, whereas the cost of the central VAT monitoring database is primarily linked to investments and operational costs with the taxable persons. Therefore, implementing a combination of both models will not reduce costs significantly.

520. A combination of the split payment model and the certified taxable person model is also possible. The advantage is that it has a large scope (comparable to the first combination). However, the expected cost/benefit ratio is lower than the first combination.

8.2.2 Recommendations for next steps

- further data collection and data quality improvement is required in order to have more robust and more accurate data to estimate the potential costs

and benefits of the different collection model. In general, this good quality data with regard to VAT across the EU can be used for various purposes (e.g. increase administrative cooperation, benchmark collection cost of VAT, regulatory impact assessments,…);

- for all models a detailed analysis is needed to investigate how the authorities could compensate additional costs incurred by taxable persons (or banks in the split payment model);

- based on the results of this Study, the split payment model, possibly in combination with a "*limited*" data warehouse model should be further investigated;

- it should be further investigated whether it is possible to compensate for cash-flow impact in the split payment model by granting quicker VAT refunds and to reduce the compliance burden on taxable persons, e.g. by reducing the information obligations such as filing client listings, in case alternative collection models are implemented;

- a consultation and interviews with various stakeholders may be envisaged in order to further assess the impact of any selected model. However, in order to ensure that the information collected is useful, it is important that the details of the model (including information and compliance obligations for taxable persons and other stakeholders) are described in detail. This will allow stakeholders to better assess the impact of a specific model;

- whatever model is further investigated, it is important that the model is made obligatory in all Member States and that the implementation is fully harmonised in all Member States. Furthermore, an analysis should be made of the impact on the NPV of the model where the technology needed would be centralised in one EU platform instead of 27 different platforms, i.e. one for each Member State. Therefore, all Member States should contribute with relevant data and input to ensure harmonisation.

Annexes

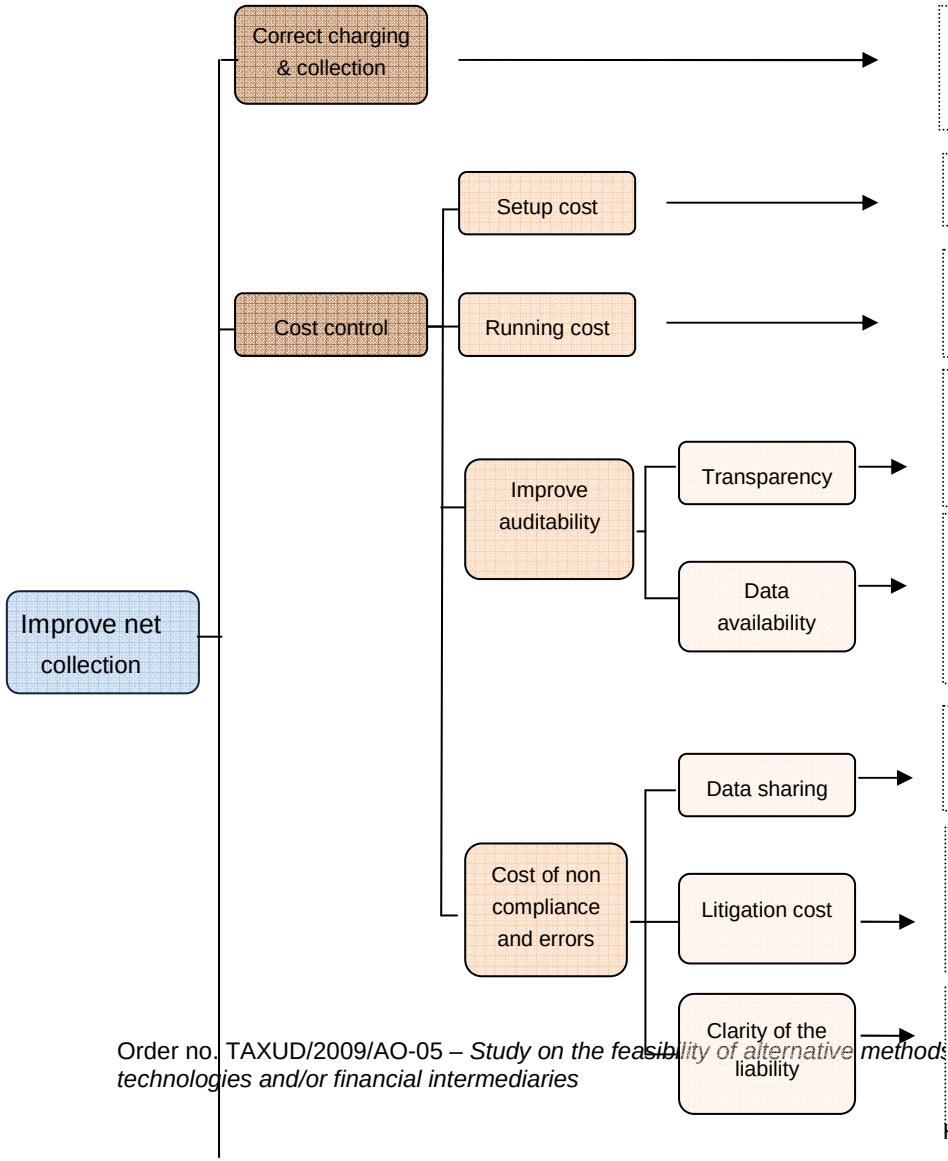
Annex 1: Detailed description of the qualitative assessment criteria

Overall collection model (OECD - Broad taxation principles)[141, 142]

Neutrality	Taxation should seek to be neutral and equitable between forms of electronic commerce and between conventional and electronic forms of commerce. Business decisions should be motivated by economic rather than tax considerations. Taxable persons in similar situation carrying out similar transactions should be subject to similar levels of taxation.	Taxable persons in similar situations carrying out similar transactions should be subject to similar levels of taxation. The collection model should not favour or disadvantage certain businesses.
Efficiency	Compliance costs for taxable persons and administrative costs for the tax authorities should be minimised as far as possible.	Costs of the VAT collection (applicable for tax authorities) and the compliance costs (applicable for taxable persons) should be reduced to a minimum.
Certainty and simplicity	The tax rules should be clear and simple to understand so that taxable persons can anticipate the tax consequences in advance of a transaction, including knowing when, where and how the tax is to be accounted.	If there is no certainty and simplicity, the number of litigations (applicable for both stakeholders), the cost of VAT collection (applicable for Tax Authority) and the compliance costs (applicable for taxable persons) could increase.
Effectiveness and Fairness	Taxation should produce the right amount of tax at the right time. The potential for tax evasion and avoidance should be minimised while keeping counter-acting measures proportionate to the risks involved.	The collection model should support the fair treatment of taxable persons and the reduction of tax evasion and fraud.
Flexibility	The system for taxation should be flexible and dynamic to insure that they keep pace with technological and commercial developments.	If a system can not easily (quickly, cheaply,…) be adapted or if a modification to the system influences the level of control significantly it may have an impact on the neutrality and disrupt the collection of VAT. Stakeholders should moreover be able to gain back the initial investment costs of the collection model over time.

[141] Please note that the OECD criteria relate to the overall collection model and are thus relevant both for tax authority and taxable persons.
[142] Ottawa framework taxation conditions contained in the OECD "International VAT/GST Guidelines" report of February 2006, http://www.oecd.org/dataoecd/16/36/36177871.pdf

Criteria from a tax authority's perspective



	Description	Importance
Correct charging & collection	The collection model should support a complete and accurate reporting and transmission of all VAT collected.	The collection model needs to be designed in such a way that all sales and purchase transactions are captured and reported to the tax authority.
Setup cost	The set up cost of the collection model should be minimised as far as possible.	Minimal setup cost will make adaption easier.
Running cost	The running cost of the collection model should be limited in relation with the total amount of tax	The running cost of the collection model should not be higher than a certain percentage of the total VAT collection.
Transparency	The set up of the collection model should be transparent and support the monitoring and auditing of transactions by tax authority.	If Tax Authority can easily control the flow of transactions (purchases, sales, VAT payments, declarations) both the efficiency and the effectiveness of the detection of fraud are enhanced.
Data availability	The collection model should support easy data mining and risk profiling.	If the collection model enhances the timeliness and completeness of correct data on transactions the Tax Authority will be able to detect fraud in a more efficient and effective way as the auditability will be improved.
Data sharing	The collection model should support the exchange of data between Member States.	If the collection model supports the exchange of data between Tax Authority of various Member States the fight against fraud and auditability will be enhanced.
Litigation cost	The number of litigations and the related costs should be reduced to a minimum.	The cost of litigations can be limited when the collection model actively supports fraud prevention and offers the necessary tools for settling litigations.
Clarity of the liability	The collection system should support the clear apportionment of the VAT liability.	The cost of non compliance can be minimised if the collection system supports a clear apportionment of the liability between parties.

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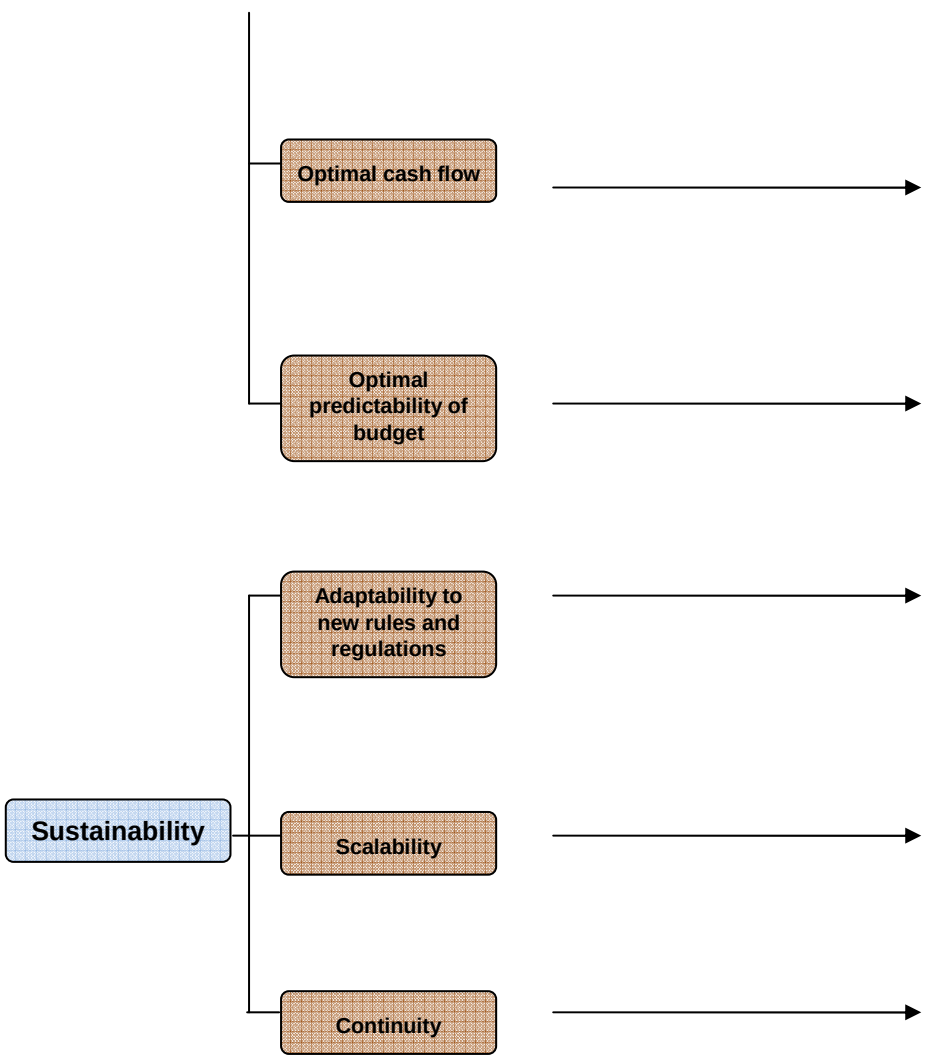
Criteria from a tax authority's perspective (2)



	Description	Importance
Optimal cash flow	The time span between the charging and the payment of taxes should be limited so that the tax authority can optimize their cash flow.	A big leap between the time of collection and time of payment can cause financial risks and enhance the requirements for additional auditing. The transparency of cash flow in the collection model also allows a sound division of the cost amongst various parties and risk transfers.
Optimal predictability of budget	The collection model should endorse the proper monitoring and prediction of the public cash flow.	If the tax authority can monitor the charging of VAT they can better forecast the amounts of VAT receipts.
Adaptability to new rules and regulations	The collection model should be easily adaptable in case of new legislation and when dealing with exceptions.	If a collection model can not easily (quickly, cheaply,…) be adapted or if a modification to the collection model influences the level of control significantly it may have an impact on the neutrality and disrupt the collection of VAT.
Scalability	The collection model should be easily scalable for new Member States participating in the collection model and it should support all kind of	The collection model in itself should be flexible so it can easily be applied by new participants e.g. for new transactions.
Continuity	The collection model should be reliable and support a continuous flow of sales and purchase transactions.	The continuity of the collection model increases the belief of all participants in the model and thus indirectly contributes to fraud prevention.

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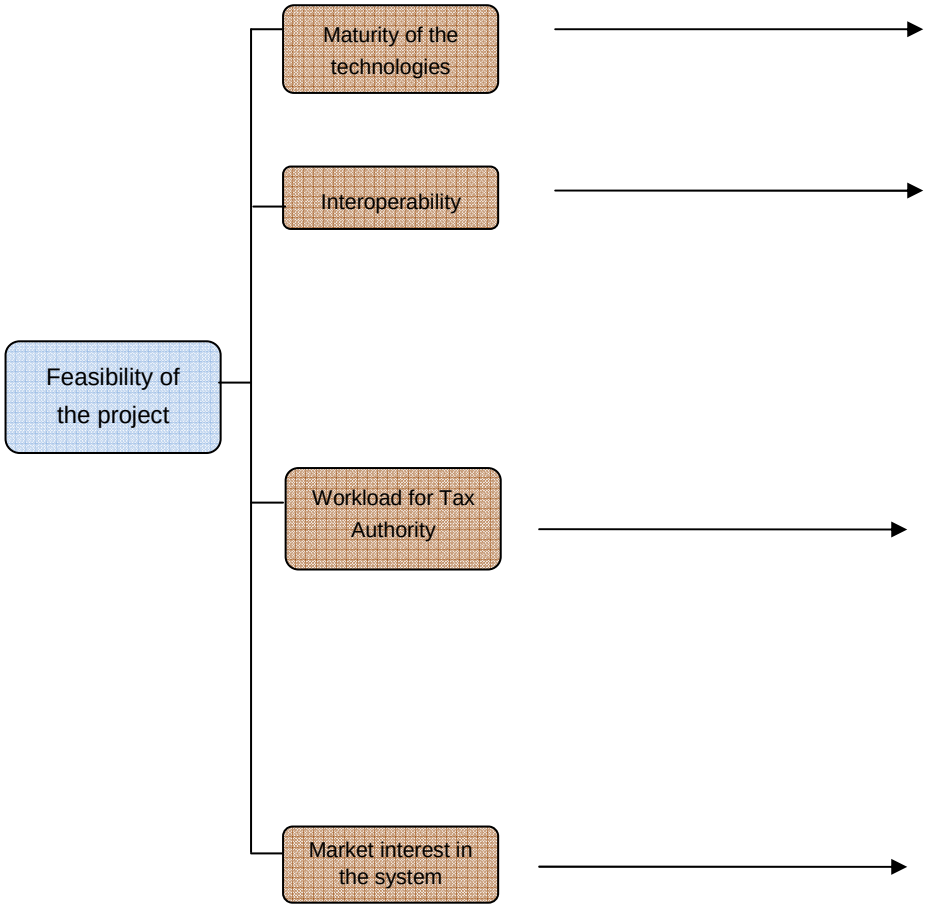
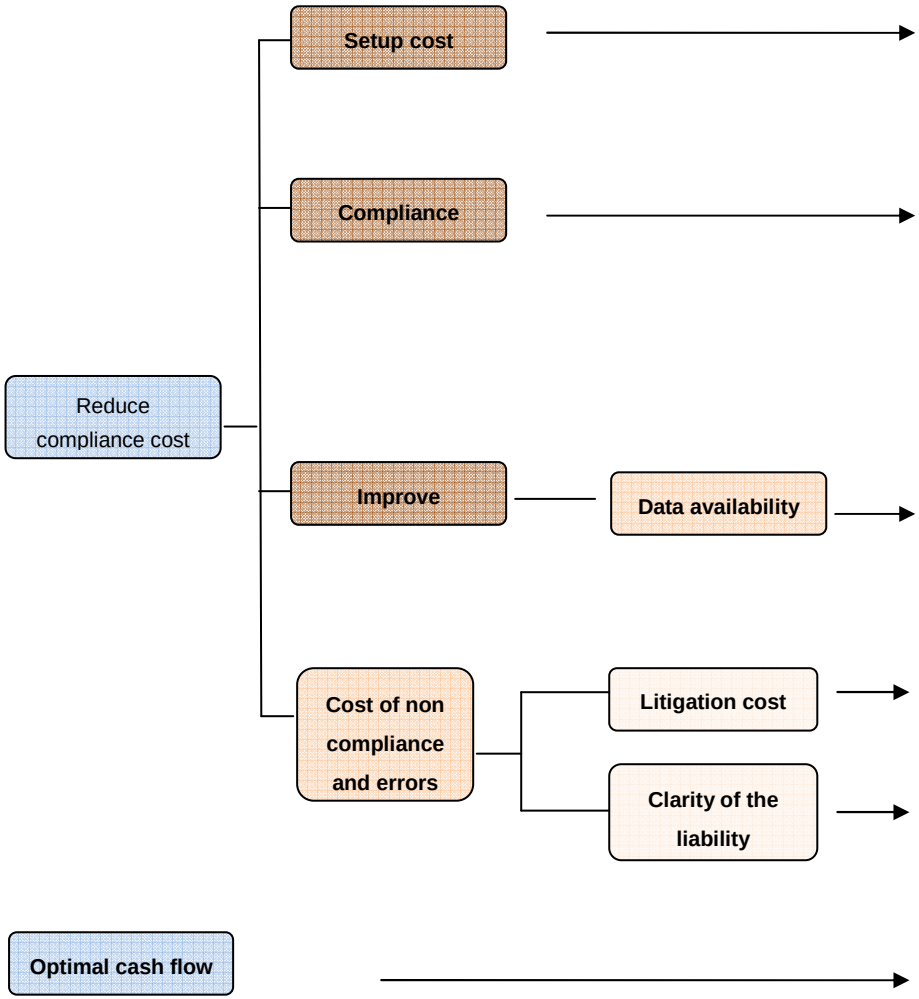
Criteria from a tax authority's perspective (3)



	Description	Importance
Maturity of the technologies	The collection model should use proven technology (both hardware and software), that is broadly available on the market and that has been applied to comparable tax or payment collection models on a broad scale.	A mature technology is a technology that has been in use long enough, so that most of its initial errors and inherent problems have been removed or reduced by further development. If technology is not mature this affects the simplicity and continuity of the collection model. The possibilities of launching the technology on a large scale might be limited.
Interoperability	The collection model should be interoperable from a technological point of view (compatibility of components) and should actively support interoperability between businesses, between member states and also be applicable for trade with third countries.	An interoperable model guarantees that it will be easily adopted by various users, for various types of transactions.
Workload for Tax Authority	The collection model should actively support the efficient working of tax authority by automating input, reporting, control and archiving procedures.	The administrative burden for Tax Authority should be limited and the collection model should support efficient fraud prevention and detection. Also the implementation project cost (capabilities needed, FTE needed) should be limited. If the public authority or businesses cannot manage the workload, there is a risk of unwanted side effects such as: ▪ the loss of control over data flows, ▪ the increase of undetected fraud, ▪ no timely payment of taxes
Market interest in the system	The collection model should be open and attractive service providers like IT Suppliers and intermediaries.	The characteristics of the collection model should allow an easy set up of the collection model in the various Member States (technology readily available on a broad scale, open source technology etc…). Crowding out effects or monopolies of providers of the collection model should be avoided.

Criteria from a taxable person's perspective



	Description	Importance
Setup cost	The set up cost of the collection model should be minimised as far as possible.	Taxable persons should be stimulated to adopt the collection model easily so the set up cost should be kept to a minimum.
Compliance	Reduction of the level and nature of information obligations placed on businesses and in particular on SMEs. The way the collection model supports full automatic processing of data and online consultation of reports and transactions.	Reduction of administrative burden is an important objective of the European Commission. Reduction of processes that are repetitive and not using technology to its maximum extent, but that are paper based, can generate large scale economic and ecological effects.
Improve – Data availability	The collection model should clearly define which data should be kept and made available by taxable persons.	If taxable persons clearly know which data needs to be kept and made available, the model becomes more certain and predictable and the compliance cost is reduced. Furthermore, the auditability will improve and the number of litigations could be reduced.
Cost of non compliance and errors – Litigation cost	The number of litigations and the related costs should be reduced to a minimum.	The cost of litigations can be limited when the collection model actively supports fraud prevention and offers the necessary tools for settling litigations.
Cost of non compliance and errors – Clarity of the liability	The collection system should support the clear apportionment of the VAT liability.	The cost of non compliance can be minimised if the collection system supports a clear apportionment of the liability between parties.
Optimal cash flow	Time span between payment of VAT and refund of VAT should be minimised as far as possible.	A big leap between the time of collection and time of payment can cause financial risks and enhance the requirements for additional auditing. The transparency of cash flow in the collection model also allows a sound division of the cost amongst various parties and risk transfers.

Annex 2: Methodology for the calculations of the NPV of the costs and benefits for each model

Our calculations are based on the assumptions made on cost drivers, future growth of these cost drivers, the potential benefits and future growth of these benefits (see sections 6.2.2.3, 6.2.3.3, 6.2.4.3, 6.2.5.3, 6.3.3.3, 7.2.10.2, 7.3.10.2, 7.4.10.2 and 7.5.10.2).

The calculations of the benefits only include direct earn-back effects by improved VAT recovery (caused by the reduction of different types of VAT fraud and the reduction of non compliance). Indirect earn-back effects, such as reduction of administrative burden, have not been taken into account in the calculation as they do not represent a direct cash flow that can be used to finance the investments. Quantitative and qualitative information of indirect effects is treated separately in the text.

We calculate the Net Present Value of the costs and benefits across the time frame 2016-2038. The NPV of the costs and benefits of each model is valid for year 2015; this is the year before the start of investments. All costs and benefits are discounted by 4%. This discount rate[143] is in accordance with the impact assessment guidelines[144].

The NPVs of costs and benefits of the models also depend on the scenario applied. The time frames of these scenarios have been inserted in the Study.

The 3 scenarios are:

- Scenario 1: the 6+21 scenario: the implementation is piloted in six Member States and, after an evaluation phase, is implemented simultaneously in the other 21 Member States;
- Scenario 2: the big bang scenario: implementation takes place simultaneously in all Member States;
- Scenario 3: the 6+7+7+7 scenario: the model is implemented gradually, with more Member States implementing it each year.

These scenarios determine the number of Member States that are included in the implementation of the models.

[143] This rate broadly corresponds to the average real yield on longer-term government debt in the EU over a period since the early 1980s. For impacts occurring more than 30 years in the future, the use of a declining discount rate could be used for sensitivity analysis, if this can be justified in the particular context.
[144] European Commission, annexes to impact assessment guidelines, 15 January 2009, http://ec.europa.eu/governance/impact/consultation/docs/ia_guidelines_draft_annexes_final_en.pdf

When the cost driver is the tax authorities the investments are spread over 1 or 2 years (or even 4 years for the split payment model). When the cost driver is the number of taxable persons the investments are done in 1 year.

We worked under the assumption that the benefits of a model are only achieved as from the year when all Member States are fully operational and that the value of the VAT Gap follows the evolution of the average GDP growth rate which we calculated based on the Eurostat data to be 3,13%.

To calculate the costs of each year we multiply the unit cost by the cost driver in the scope. These cost drivers can be straight forward i.e. the number of tax authorities, or more complex i.e. the number of taxable persons. For the more complex cost drivers we take a share of the total amount, relative to the number of Member States in the scope (e.g. 6/27, 7/27 or 21/27). We make note of the fact that these more complex cost drivers are subject to growth themselves. In annex 3 we mention the base year of the data alongside these complex cost drivers.

Annex 3: Overview of the detailed calculations per model

The split payment model

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A&B. Purchase and sale transaction														
Infrastructure to manage the VAT current accounts per taxable person. This current account contains data from the blocked VAT account and data from the VAT return the taxable person submits.	Investment cost:		105	316	1.547	2.665	123	368	1.970	3.395	100	299	1.363	2.349
	Min	Max												
	5.000.000	15.000.000												
	Investment cost driver:													
	Tax authorities	27												
	Operational cost:													
	Min	Max												
	6.500.000	11.200.000												
	Operational cost driver:													
	Tax authorities	27												
Blocked VAT account for every taxable person.	Investment cost:		0	205	0	10.001	0	231	0	11.574	0	193	0	9.075
	Min	Max												
	0	10.000.000												
	Tax authorities	27												
	Operational cost:													
	Min	Max												
	0	20												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
- Modified software for the banking software of taxable person (allow for an automated check on the balance of the blocked VAT bank account in the case of an automated split payment). This is not applicable for a manual split payment system. - Updated SEPA electronic payment schemes to allow for the additional data elements. - Modification of the financial infrastructures to allow the enhanced data to flow through the system. This is less intrusive in the case of a manual split payment system. - Additional field with the blocked VAT bank account number should be inserted in invoices and credit notes.	Investment cost:		3.907	6.251			4.537	7.260			3.694	5.910		
	Min	Max												
	5.000.000.000	8.000.000.000												
	Investment cost driver:													
	The entire EU-27	1												

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Provide for operating time to manage his blocked VAT bank account.	Operational cost:													
	Min	Max												
	200	280			100.011	140.015			115.739	162.035			90.747	127.046
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
There will be at least twice as many payment requests, i.e. relating to split + portion to make up for the deficits in the blocked VAT bank account. Most banks charge for payment services on a per transaction basis.	Operational cost:													
	Min	Max												
	0,00345	0,007			542	1.099			678	1.376			480	975
	Operational cost driver:													
	Number of additional payments (2009)	14.500.000.000												
Management of the direct debit mandates for every taxable person.	Investment cost:													
	Min	Max												
	2	4	89	177	1.000	1.000	97	194	1.157	1.157	85	170	907	907
	Investment cost driver:													
	Taxable persons (2009)	34.895.924												
	Operational cost:													
	Min	Max												
	2	4												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
Legislative change to move the tax point to the moment of payment.	Unquantifiable/ not known													
C. VAT return														
Standard format and technical infrastructure for the tax authority's bank to report VAT information to the tax authority on a transactional basis.	Operational cost:													
	Min	Max												
	0,00345	0,007			542	1.099			678	1.376			480	975
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
C. VAT return														
- Standards and system of the tax authority to provide the taxable person with an overview of all transactions booked in his VAT current account. - Generation of pre-filled draft VAT return for each VAT period. - Web infrastructure to allow for online amendment, signature and submission of the VAT return.	Investment cost:		316	527	7	14	368	613	8	16	299	499	6	13
	Min	Max												
	15.000.000	25.000.000												
	Investment cost driver:													
	Tax authorities	27												
	Operational cost:													
	Min	Max												
	0,00345	0,007												
	Operational cost driver:													
	Number of VAT returns (2009)	139.583.697												
D&E. Settlement of VAT payable and VAT refundable														
- Management of the VAT payment requests and follow-up on accounts receivable. - Management of the VAT payment refund and follow-up on accounts payable.	Not incremental													
F. Audit														
Real-time auditing system to monitor the movements in the blocked VAT bank accounts.	Investment cost:		35	101	250	375	40	118	289	434	33	96	227	340
	Min	Max												
	1.650.000	4.800.000												
	Investment cost driver:													
	Tax authorities	27												
	Operational cost:													
	Min	Max												
	0,5	0,75												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
			Total NPV (in million EUR)				Total NPV (in million EUR)				Total NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
			4.452	7.578	103.898	156.269	5.165	8.782	120.521	181.364	4.210	7.167	94.212	141.679
			Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max	
			108.350		163.847		125.686		190.146		98.422		148.846	

The central VAT monitoring database model

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A&B. Purchase and sale transaction														
E-invoicing standards and applications with all required data elements needed for VAT monitoring at a transactional level.	Investment cost:		12.121	96.969	51.078	85.737	12.834	102.670	62.837	105.477	11.535	92.284	45.796	76.873
	Min	Max												
	250	2.000												
	Investment cost driver:													
	Taxable persons (2009)	34.895.924												
	Operational cost:													
	Min	Max												
	0,28	0,47												
	Operational cost driver:													
	Number of B2B invoices (2009)	14.500.000.000												
	Additional operational cost for licensing:													
	Min	Max												
	0	0												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
Legislation to make e-invoicing mandatory.	Unquantifiable/ not known													
- Central VAT Monitoring Database infrastructure that is able to capture all invoicing and transaction details on a real-time basis at the moment the invoices are issued. - Communication infrastructure that allows for the transaction information to be sent to the Central VAT Monitoring Database.	Investment cost:		113	339	2.727	4.700	113	339	2.727	4.700	113	339	2.727	4.700
	Min	Max												
	5.000.000	15.000.000												
	Investment cost driver:													
	Tax authority	27												
	Operational cost:													
	Min	Max												
	9.750.000	16.800.000												
	Operational cost driver:													
	Tax authority	27												

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
C. VAT return														
- Standards and system of the tax authority to provide the taxable person with an overview of all transactions booked in his VAT current account. - Generation of pre-filled draft VAT return for each VAT period. - Web infrastructure to allow for online amendment, signature and submission of the VAT return.	Investment cost:		339	565	7	15	382	637	9	18	320	534	7	14
	Min	Max												
	15.000.000	25.000.000												
	Investment cost driver:													
	Tax authority	27												
	Operational cost:													
	Min	Max												
	0,0035	0,0070												
	Operational cost driver:													
	Number of VAT returns (2009)	139.583.697												
D. Settlement of VAT payable (no changes)														
E. Settlement of VAT refundable (no changes)														
F. Audit														
Data mining infrastructure, business intelligence systems and risk profiling software that are able to process the captured data and to detect risks and fraudulent behaviour.	Investment cost:		37	108	2	4	42	122	2	5	35	102	2	3
	Min	Max												
	1.650.000	4.800.000												
	Investment cost driver:													
	Tax authority	27												
	Operational cost:													
	Min	Max												
	0,50	0,75												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
			Total NPV (in million EUR)				Total NPV (in million EUR)				Total NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
			12.610	97.981	53.814	90.456	13.371	103.768	65.576	110.199	12.004	93.258	48.532	81.589
			Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max	
			66.424		188.437		78.947		213.967		60.536		174.847	

The data warehouse model

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A&B. Purchase and sale transaction														
- Requirements for the VAT Data Warehouse infrastructure that the taxable person needs to make accessible to the tax authority and standard format for predefined transaction data that needs to be uploaded into this VAT Data Warehouse. The data details could be based on SAF-T. Requirements should include the remote access and security mechanisms. - Set-up and operation of the VAT Data Warehouse.	Investment cost:		24.242	121.211	67.493	134.985	25.668	128.338	81.532	163.065	23.071	115.354	60.939	121.877
	Min	Max												
	500	2.500												
	Investment cost driver:													
	Taxable persons (2009)	34.895.924												
	Operational cost:													
	Min	Max												
	125	250												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
C. VAT return (no changes)														
D. Settlement of VAT payable (no changes)														
E. Settlement of VAT refundable (no changes)														
F. Audit														
Data mining infrastructure, business intelligence systems and risk profiling software that are able to process the data in the VAT Data Warehouse of the taxable person remotely and to detect risks and fraudulent behaviour.	Investment cost:		75	217	22	45	84	244	28	56	70	205	20	40
	Min	Max												
	1.650.000	4.800.000												
	Investment cost driver:													
	Tax authorities	27												
	Operational cost:													
	Min	Max												
	80.000	160.000												
	Operational cost driver:													
	Tax authorities	27												
			Total NPV (in million EUR)				Total NPV (in million EUR)				Total NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
			24.317	121.428	67.515	135.030	25.752	128.582	81.560	163.121	23.141	115.559	60.958	121.917
			Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max	
			91.832		256.459		107.312		291.703		84.100		237.476	

PRICEWATERHOUSECOOPERS

The certified taxable person model

Requirements driving costs	Assumed investment and operational costs (in EUR) and the cost drivers		Scenario 1 NPV (in million EUR)				Scenario 2 NPV (in million EUR)				Scenario 3 NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A&B. Purchase and sale transaction														
- Use of reliable accounting system and processes for both the VAT treatment of sales and purchase transactions and the VAT compliance (invoices, VAT returns and listings). - Strong audit trails between invoices, supplies, deliveries and payments.	Investment cost:													
	Min	Max	0	60.606			0	64.169			0	57.677		
	0	1.250												
	Investment cost driver:													
	Taxable persons (2009)	34.895.924												
	Operational cost:													
	Min	Max												
	N/A	N/A												
	Operational cost driver:													
C. VAT return														
- Development of a "Tax Control Framework" for VAT, which focuses on the internal control of tax processes. - Performing a "self-risk assessment" and providing an "in control statement". Reporting by the Taxable Person on its main tax risks and on the design and effectiveness of the internal risk management and control systems used to manage the main tax risks during the relevant financial year.	Investment cost:													
	Min	Max	24.242	60.606	67.493	134.985	25.668	64.169	81.532	163.065	23.071	57.677	60.939	121.877
	500	1.250												
	Investment cost driver:													
	Taxable persons (2009)	34.895.924												
	Operational cost:													
	Min	Max												
	125	250												
	Operational cost driver:													
	Taxable persons (2009)	34.895.924												
D. Settlement of VAT payable (no changes)														
E. Settlement of VAT refundable (no changes)														
F. Audit														
Changes in terms of methodology, risk detection and intelligence gathering regarding VAT audits.	Investment cost:													
	Min	Max	68	203			76	229			64	192		
	1.500.000	4.500.000												
	Investment cost driver:													
	Tax authorities	27												
			Total NPV (in million EUR)				Total NPV (in million EUR)				Total NPV (in million EUR)			
			Invest		Operate		Invest		Operate		Invest		Operate	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
			24.310	121.415	67.493	134.985	25.744	128.567	81.532	163.065	23.135	115.547	60.939	121.877
			Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max		Invest + Operate Min		Invest + Operate Max	
			91.803		256.400		107.276		291.632		84.073		237.424	

The VAT Gap reduction potential of all the models

Calculation of the benefits of the four models according to the scenario		Scenario 1 NPV (in mln EUR)		Scenario 2 NPV (in mln EUR)		Scenario 3 NPV (in mln EUR)	
		Min	Max	Min	Max	Min	Max
Split payment model							
VAT Gap reduction potential (in mln EUR in 2009)		846.764	1.289.784	1.091.250	1.662.184	610.387	929.736
Min	53.673						
Max	81.754						
Time frame for the benefits (from the year all Member States are fully operational until 2038)		*2024-2038*		*2020-2038*		*2028-2038*	
Central VAT monitoring database model							
VAT Gap reduction potential (in mln EUR in 2009)		690.487	1.460.256	867.853	1.835.354	519.004	1.097.601
Min	38.287						
Max	80.969						
Time frame for the benefits (from the year all Member States are fully operational until 2038)		*2022-2038*		*2018-2038*		*2026-2038*	
Data warehouse model							
VAT Gap reduction potential (in mln EUR in 2009)		1.190.857	1.895.097	1.496.754	2.381.893	895.107	1.424.449
Min	66.031						
Max	105.081						
Time frame for the benefits (from the year all Member States are fully operational until 2038)		*2022-2038*		*2018-2038*		*2026-2038*	
Certified taxable person model							
VAT Gap reduction potential (in mln EUR in 2009)		732.151	1.533.067	920.219	1.926.868	550.321	1.152.329
Min	40.597						
Max	85.007						
Time frame for the benefits (from the year all Member States are fully operational until 2038)		*2022-2038*		*2018-2038*		*2026-2038*	

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