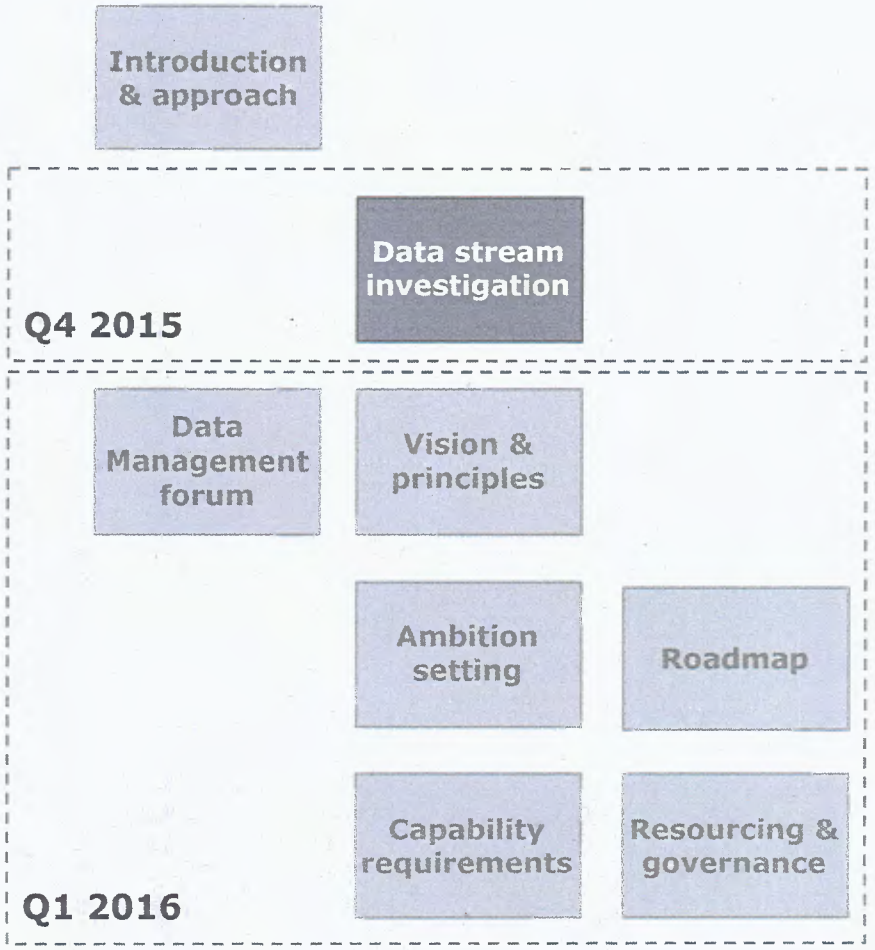
Belastingdienst

Investigating Data Streams

December 2015

Documentation structure and objectives

Documentation structure



Objectives for this document

- Outline objectives and approach of the data stream investigation
- Provide summary of results for the overall data landscape as well as the four use cases
- Provide overview of observations, in the following categories:
  - Data governance
  - Data security and user access management
  - Data processing
  - Business process
  - Other

Table of content

1 Executive summary

Assignment background and objectives

As part of the Investeringsagenda the data stream investigation aimed at establishing a better understanding for Belastingdienst's data environment.

Main objectives of this assignment were:

1. Increase transparency on current data landscape (sources, products, processing)
2. Assess efficiency of data processing, data governance and data security aspects (based on key data stream use cases)
3. Outline potential areas of improvement and define next steps

Results achieved

Following **results** have been achieved throughout the assignment:

1. High-level data landscape view, incl.:
   - Categorisation framework for data sources and comprehensive list
   - Categorisation framework for data products (outputs)
2. Four use case investigations (incl. deep-dives) on:
   #1 Pre-filled income tax statements
   #2 Base customer registration
   #3 Data provided to CBS
   #4 Database auto

Compilation of a catalogue of **key observations** on data management, data processing and business process aspects

Definition and alignment on **next steps**:
- Outlining of an organisation-wide data management framework
- Realisation of identified further short term enhancements

Table of content

2 Objectives and approach
Main objective is the increase of transparency on data streams

The data stream investigation work stream's objective is to highlight the sources and users of data in the organisation, identify observations and areas for improvement as well as outline next steps

Objective		Approach	Result
1	**Increased transparency** on current data streams	Identify & classify data sources and user groups across BD (to the extent feasible), incl. type of data and data processing used	Data transparency will help prioritise users and data sources and support product standardisation thus enabling more effective use of available data (incl. 3rd party data)
2 a	**Efficient data processing**	For a selected group of four key processes catalogue end-to-end processes and identify key observations	Identify any duplication/efficiency options from an initial high-level review for subsequent remediation
b	**Clear data governance** principles	For the four processes, review key aspects of data governance and use to steer a proposal based on findings	Outlining of data governance approaches based on findings and external/industry practice
	Outline necessary **areas of improvement**	Based on observations and ongoing/planned activities, outline areas of improvement	Propose next steps and major decisions/ questions within envisioned areas
3	Align on **approach and next steps**	Agree approach to roadmap / timeline for high-level phased assessment and remediation on findings	Definition of next steps towards a more coherent data management capability

2 Objectives and approach
High-level approach overview

1. Assessment of overall current state

Overview of data sources and outputs

Suggested classification of data sources

Suggested classification of BD products

Issue list

Systems

Outputs

Sources

2. Key data stream investigation & definition of target state principles

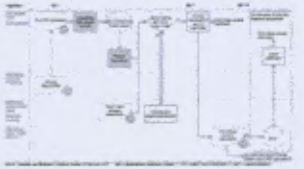
Details for key data streams

Issues & enhancements

Data governance recommendations

Target state principles

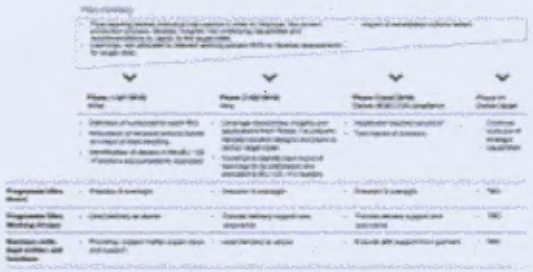
Process steps



Principles for target state based on the assessment of current state

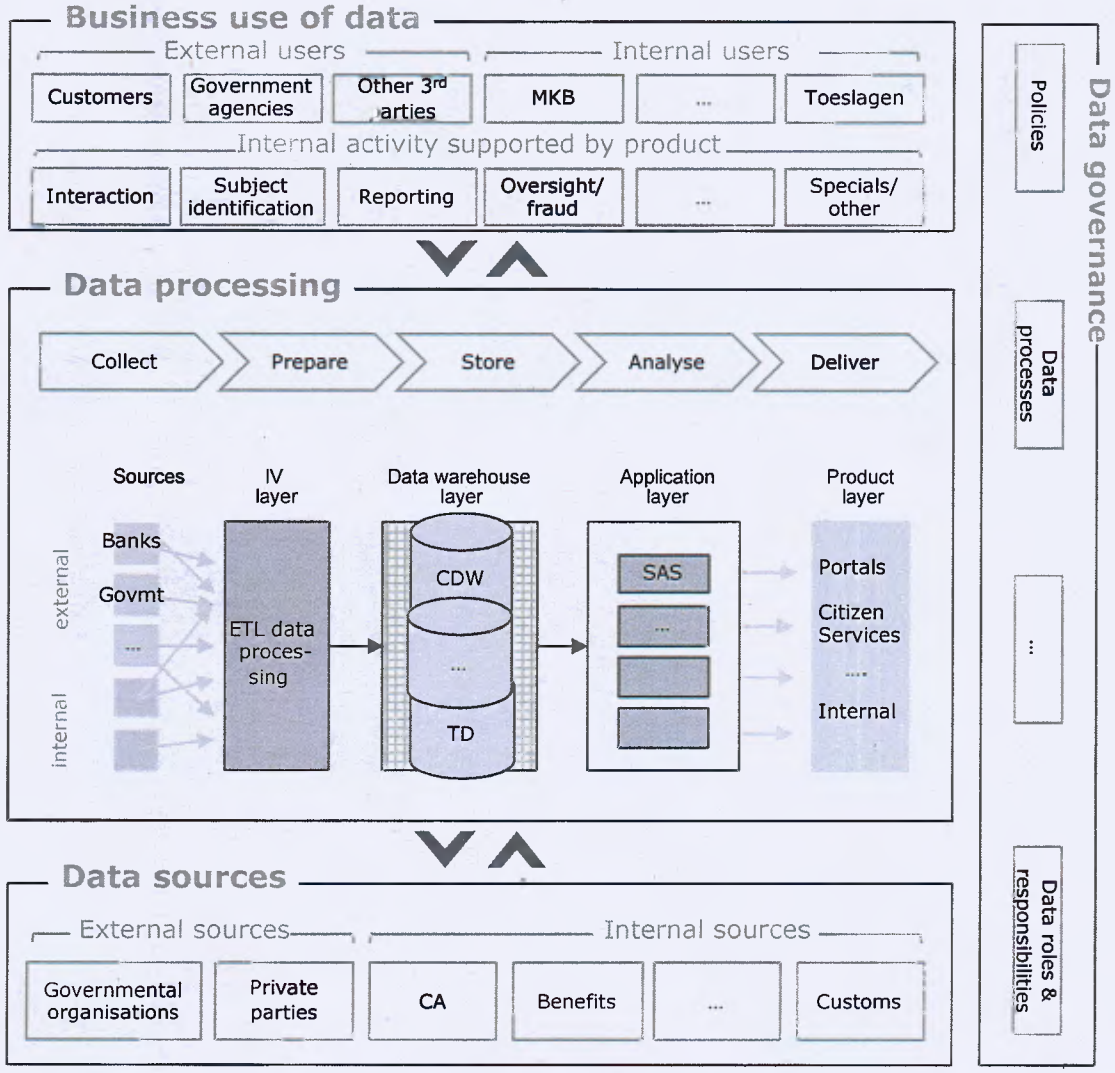
3. Alignment on approach and next steps

High-level decision on focus areas & next steps



Definition of next steps towards a more coherent data management capability

2 Objectives and approach
Approach details – assessing current state



1. Assessment of overall current state of data *(across BD, to extent feasible)*
- Assessment and classification of data sources and business usage/products
- Development of system landscape overview

2a. Key data stream investigation *(for 4 key data streams/use cases)*
- Assessment of data processing steps and related issues
- Catalogisation of observations, prioritization and suggested enhancements

2b. Outlining target state vision objectives
- Data governance, responsibilities, quality, security aspects
- Development of target state vision on IT architecture and data management

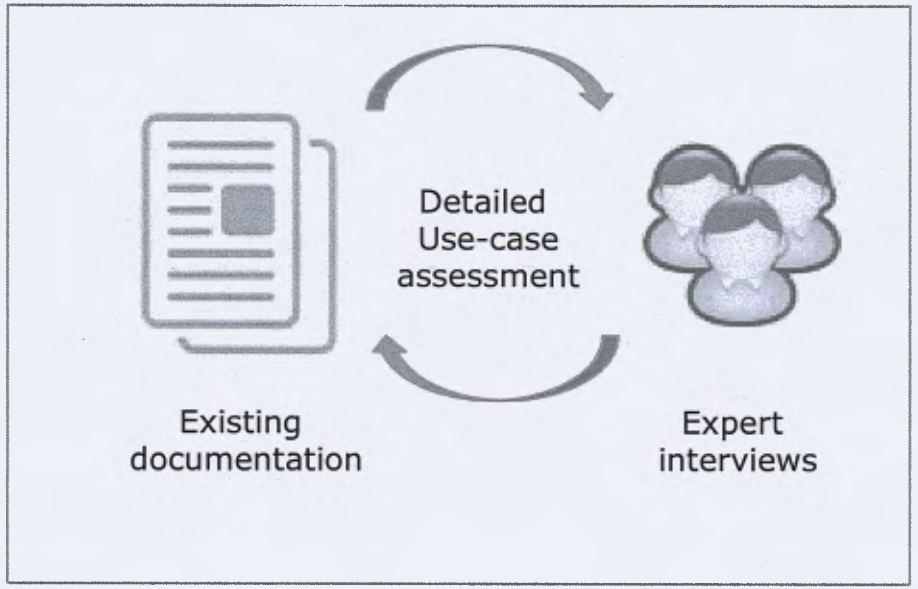
3. Align on areas of focus, approach and next steps
- Alignment on focus areas, based on findings
- Outlining of next steps towards an organization-wide data management framework

Source: Oliver Wyman analysis

2 Objectives and approach
Approach details - expert interviews and documentation

Approach

- Key processes / use-cases was assessed and refined based on:
  - Review of available documents (process documentation, architecture documents, database specifications, quality assurance documentation, data sources, etc.)
  - Expert interviews
  - Final validation of results



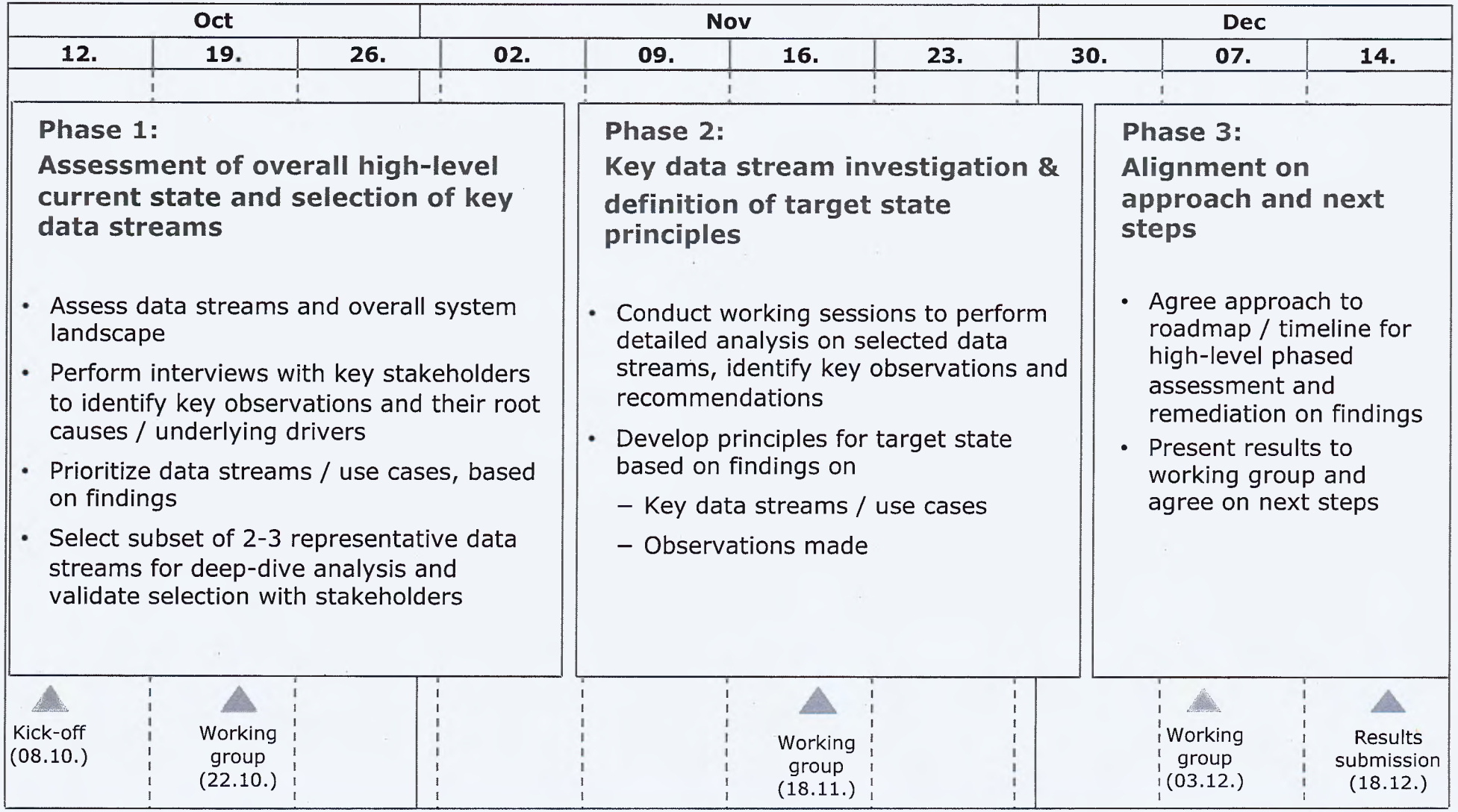
Key questions / topics addressed

- Overall landscape / process and involved parties
- Special topics for the process and planned developments
- General concerns and best practices
- Process steps in particular, based (but not limited to) following information per process step:

Use case questionnaire (excerpt)

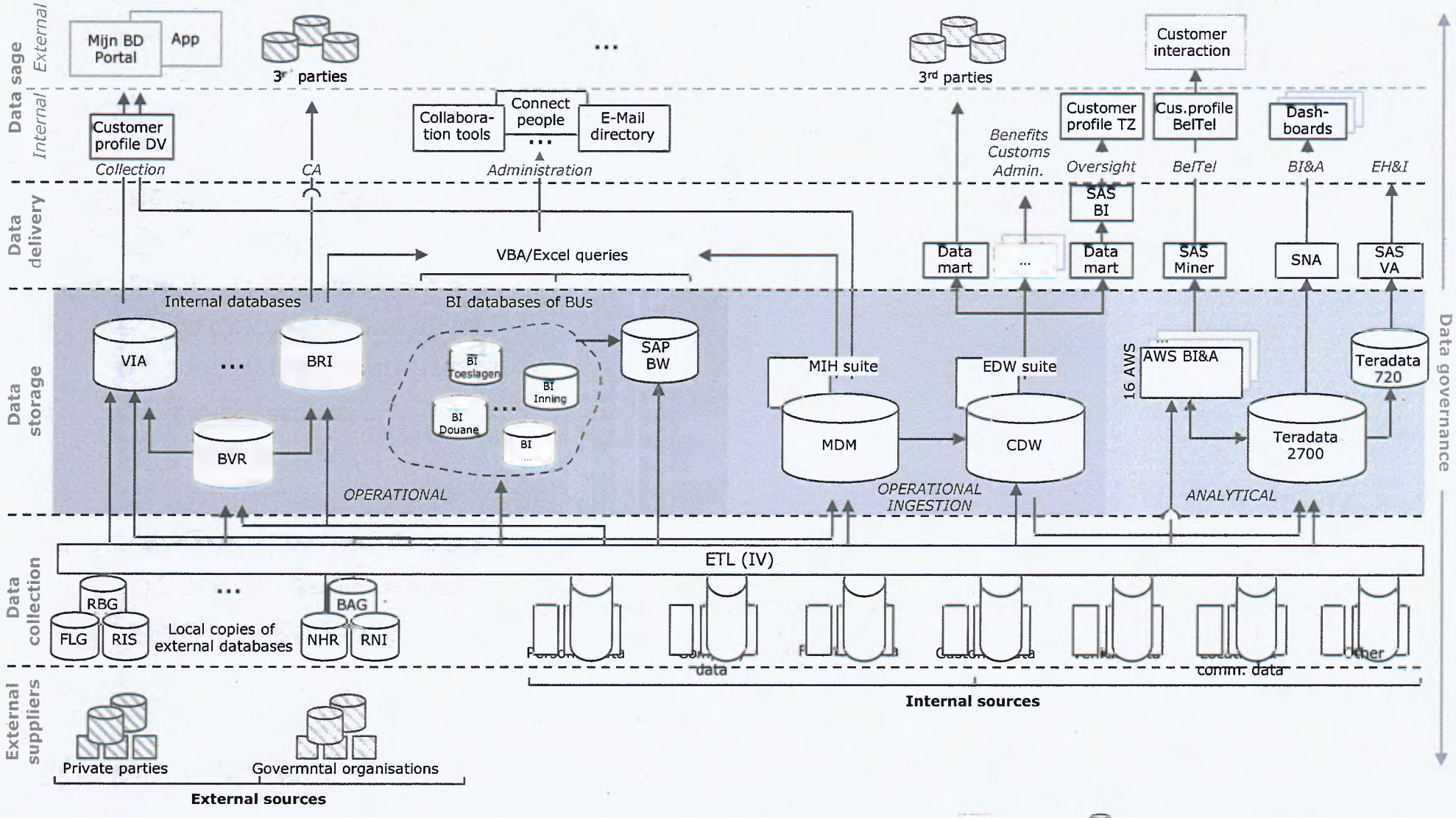
1. What is done?
2. Who is responsible?
3. How is data processed (manual / automated / LOA etc. processing)?
4. How often is it done in a typical use / how often is the process step picked-up by another ad-hoc process (out of the regular cycle)?
5. Is the process step bespoke or general?
6. What governance and policies are applied (in practice)?
7. Is the process step documented?
8. Is it controlled i.e. is the result checked and the decisions repeatable?
9. What is the input?
10. What is the outcome / what is the 'leakage' (usage by other parties / processes)?
11. What are the known risks / issues?
12. ...

2 Objectives and approach
High-level timeline



3 Table of content

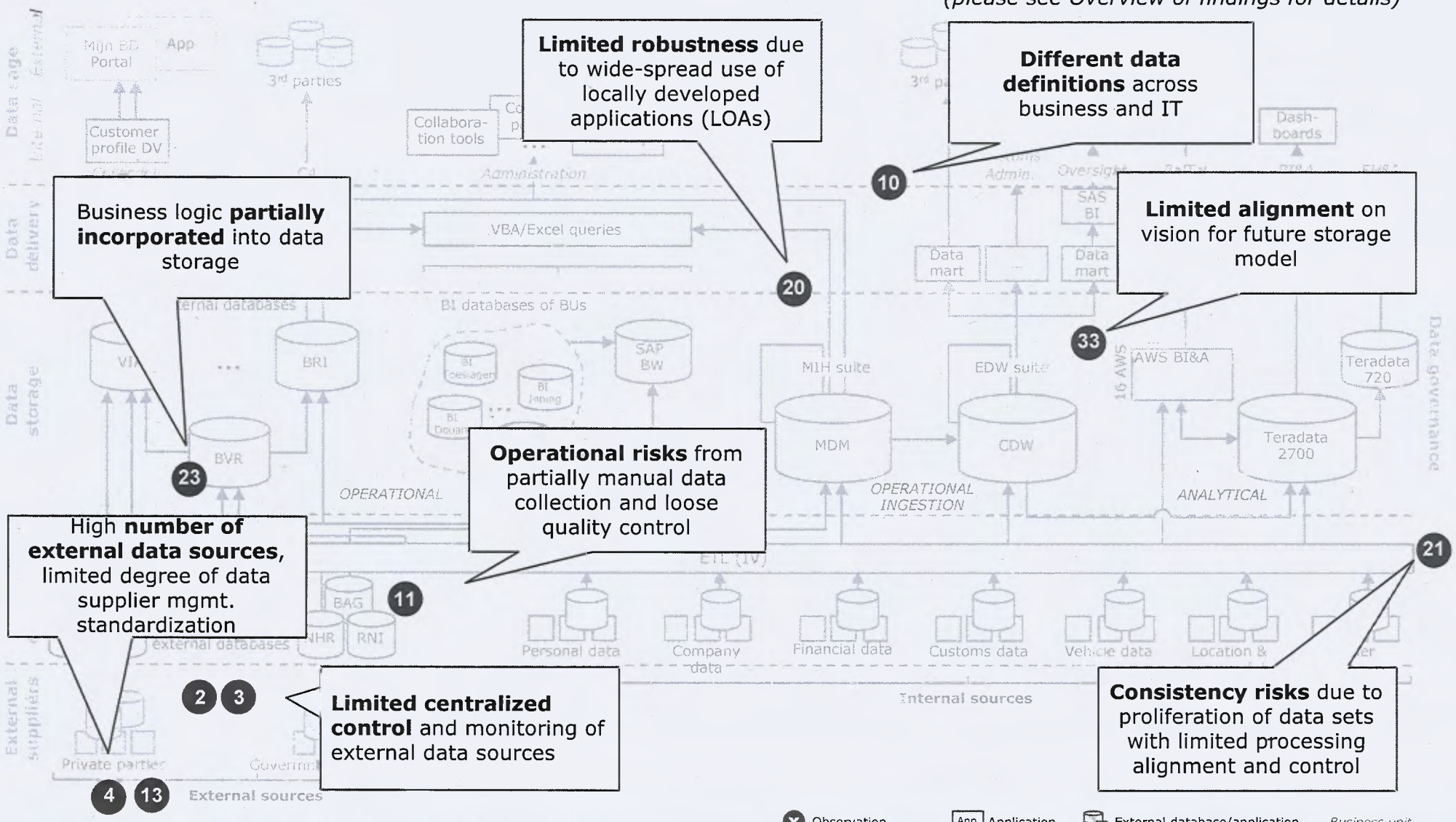
3 Overall data landscape
High-level overview



Note: overview not exhaustive, e.g. LOAs/COAs not shown
Source: expert interviews, Oliver Wyman analysis

3 Overall data landscape
High level overview with key observations

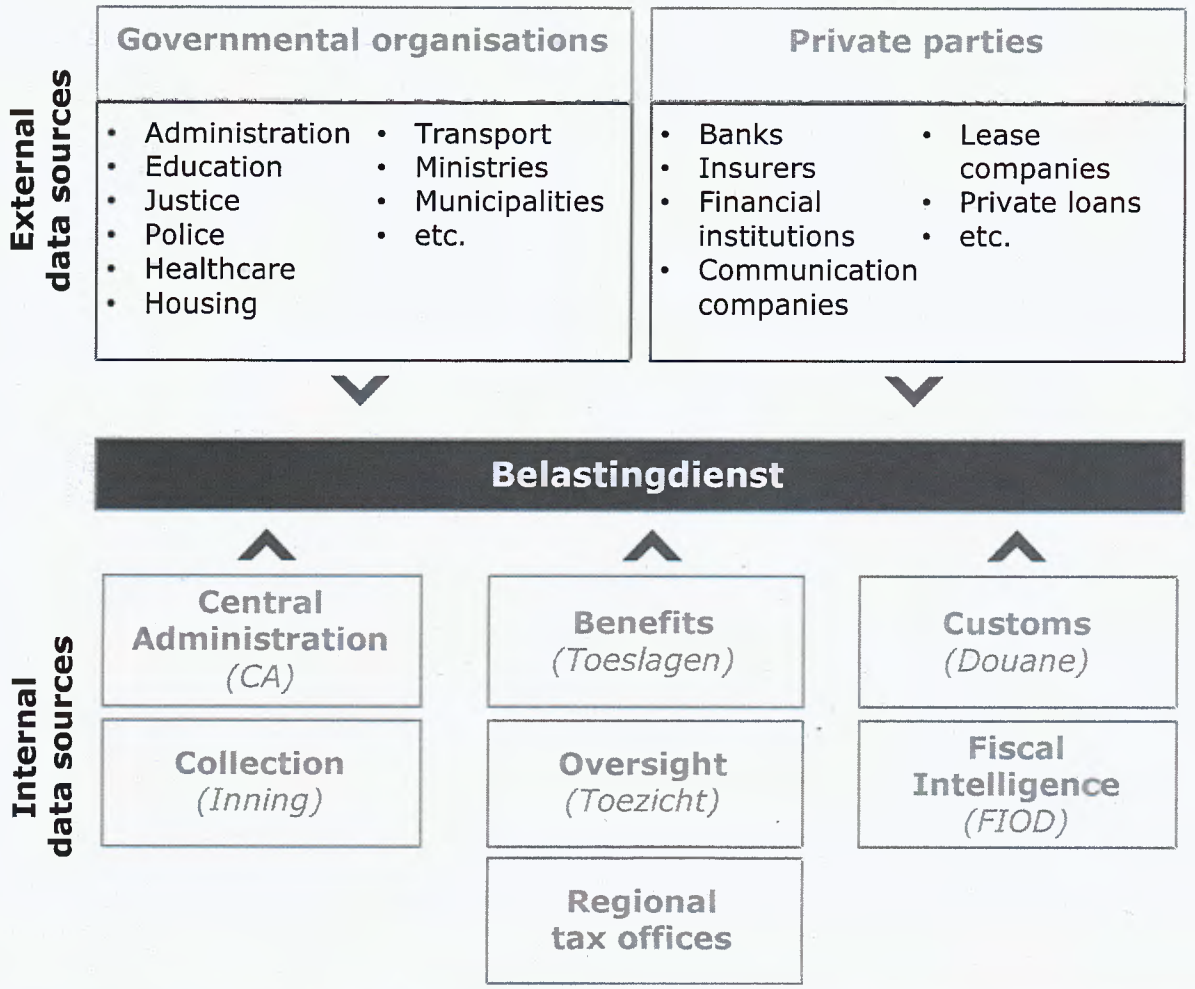
(please see Overview of findings for details)



Note: overview not exhaustive, e.g. LOAs/COAs not shown
Source: expert interviews, Oliver Wyman analysis

3 Overall data landscape
Data sources: overview and observations

Overview of data sources



General information

External data

- ~50 types of ext. sources resulting in ~180 data streams and >40.000 individual data sources
- ~95% of the overall external data is collected and processed by CA[1], ~5% of the data is collected directly by business units (direct supplier mgmt.), e.g. Toeslagen, EH&I
- Limited central overview and monitoring of the type and amount of data, collected directly from the business units (parallel data collection and processing)
- Decision if data is collected from a new external data supplier ultimately taken by CA based on input from business

Internal data

- Each domain has an own Information Management (IM) and a system architecture in place
- Various intermediary databases used as internal sources
- ~100 such internal sources identified (CA: 30%, Benefits:20%; Customs: 20%, Collection: 8%, Rest: 12%)

1 Expert estimation Central Administration

3 Overall data landscape
Data sources: data collected by business units – Toeslagen (1/2)

Observations

- Some data gets collected from and/or delivered to 3rd parties directly by business units (e.g. child benefits data collection by Toeslagen):
  - → Approx. 95%[1] of the data collection goes through CA, remaining ~5% of the data gets collected directly by Business Units
  - → Limited central visibility on directly collected data
- Direct collection of the data does not seem to rely on the contracts set-up by CA and usually do not have SLAs in place
  - → De-centralized and varying degree of control of contracts / agreements for data directly collected by business units

Example: Data collected / delivered directly by Toeslagen *(non-exhaustive)*

	Data category	External 3rd party
Direct data collection by Toeslagen	**Health care benefits**	• Social Insurance Bank (SVB) • Defence ministry (MinDef) • Justice department (V&J) • Central Judicial Collection Agency (CJIB)
	Rent benefits	• Rent committee (HC)
Direct data delivery from Toeslagen	**Rent benefits**	• Ministry of finance (MinFin) • Rent committee (HC)
	Day care benefits	• Child care organization (KOI)

1 Adjusted estimate by Central Administration experts, excluding taxpayer data from portals and data for database auto
Source: Lijst gegevensuitwisselingen Toeslagen 27102015 v2.0, adjusted through discussion Toeslagen (01.12.2015)

3 Overall data landscape
Data sources: data collected by business units – Toeslagen (2/2)

	Category	External 3rd party	Data type	Delivery medium	Frequency	Volume
Collection	**Health care benefits**	Social Insurance Bank	Gemoedsbezwaren[1]	Mail	Annually	15.000 entries
		Defence ministry	Files soldiers	Mail	Annually / Half-annually	20.000 – 30.000 data sets
		Justice department	Prisoners	DVD	Annually / Half-annually	20.000 – 30.000 data sets
		Central Judicial Collection Agency	Request for involvement of BSN in benefits (case driven)	RINIS[2]	Realtime	3.000 data sets / day
			Request for subscribe defaulter (case driven)	RINIS	Realtime	300 data sets / day
			Request for unsubscribe defaulter	RINIS	Realtime	2.000 data sets / day
	Rent benefits	Rent committee	Proof of reasonability test	Paper / postal service	Weekly	35 data sets / week
			Statements from the rent committee	Paper / postal service	3-4 x per week	50 data sets / collection
Delivery	**Rent benefits**	Rent committee	Proof of reasonability test	Mail	Monthly	75 data sets / month
		Ministry of finance (departments SZW, BZK, VWS)	Rent data for statistical purposes (non-anonymised)	File sharing (DocZend)	Monthly	3-4 Mio. data sets / month
	Day care benefits	Child care organization (KOI)	Overview of stored funds	Mail	Ad hoc	3-4 Mio. data sets / month

1 Data used not only by Toeslagen, but also by other business units within Belastingdienst
2 RINIS = Organization for Routering Messages via the RINIS-server
Source: Lijst gegevensuitwisselingen Toeslagen 27102015 v2.0, adjusted through discussion Toeslagen (01.12.2015)

3 Overall data landscape
Data sources: data collected by business units – EH&I

Observations

- EH&I does collect some data directly from 3rd parties:
  - Most of the data used by EH&I is collected by Central Administration (CA)
  - However, some data is collected directly by local tax offices and provided to EH&I

- EH&I also delivers information / analysis (only in very rare cases the underlying data) directly to 3rd parties:
  - For new information requests, EH&I will first confirm that agreements with the 3rd party are still in place and the information requested falls within the criteria agreed
  - If no agreement is in place, EH&I decides jointly with Ministry of Finance whether and how to set-up an agreement before delivering the information
  - In rare cases data is provided directly to third parties, but only on a one-off / ad hoc basis

Example Data collected directly by EH&I
(non-exhaustive)

Data category	External 3rd party	Collection
Newly issued driver's licenses	Driver's academies in Netherlands	Manual collection by local tax offices
Registered construction workers	Major construction companies	Manual, to local tax office
Import / Export data (extract)	Customs (Douane)	n/a
Foreign bank accounts	Wealth management institutes (tbc)	Manual (list)
Fine data	Ministry of social affairs (SZW)	Manual

Source: information based on discussion with EH&I experts (08.12.2015)

3 Overall data landscape
Data products (outputs): initial categorisation framework

Output capture approach

- Focus on final products applied for reporting or decision making, not intermediary outputs
- Propose to start at a high-level before building out the detail/granularity for key areas

Categorisation framework proposed across 2 dimensions *(preliminary)*

A. Where is the output delivered? *[align with BD TOM, De Jong Cube]*

External			Internal					
Customers	**Govt. agencies**	**Other 3rd parties**	**GO**	**MKB**	**ZZP**	**Belastingen**	**Toeslagen**	**Other**
• Individ. • Business • Etc.	• Parliament • Customs • Municip. • Etc.	• Banks • Insurers • Etc.	***Detailed segmentation currently under development by BD TOM***					

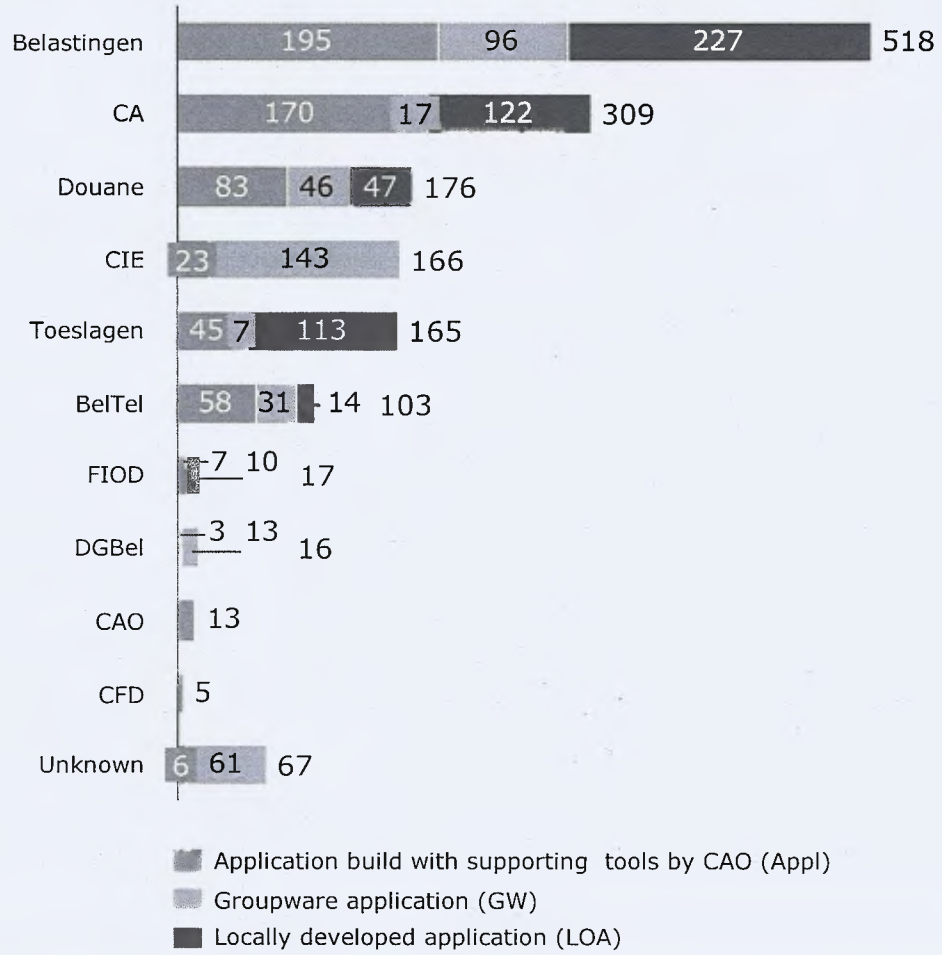
B. What internal activity does the output support? *[align with De Jong Cube]*

Interaction	Subject Identification	Determine rights/ obligations	Effectuate rights/ obligations	Oversight/ Fraud	Specials/ Other
• Calls • Letters • In-person • Internet	• Customer registration	• Information provision • Return processing • Appeals	• Recovery • Payment • Customer treatment	• Goods & passengers • Individuals	• Specials • Intelligence • Indirect processes

Source: expert interviews, Oliver Wyman analysis

3 Overall data landscape
Application landscape overview (1/2)

Overview of applications within BD
(# of identified applications)



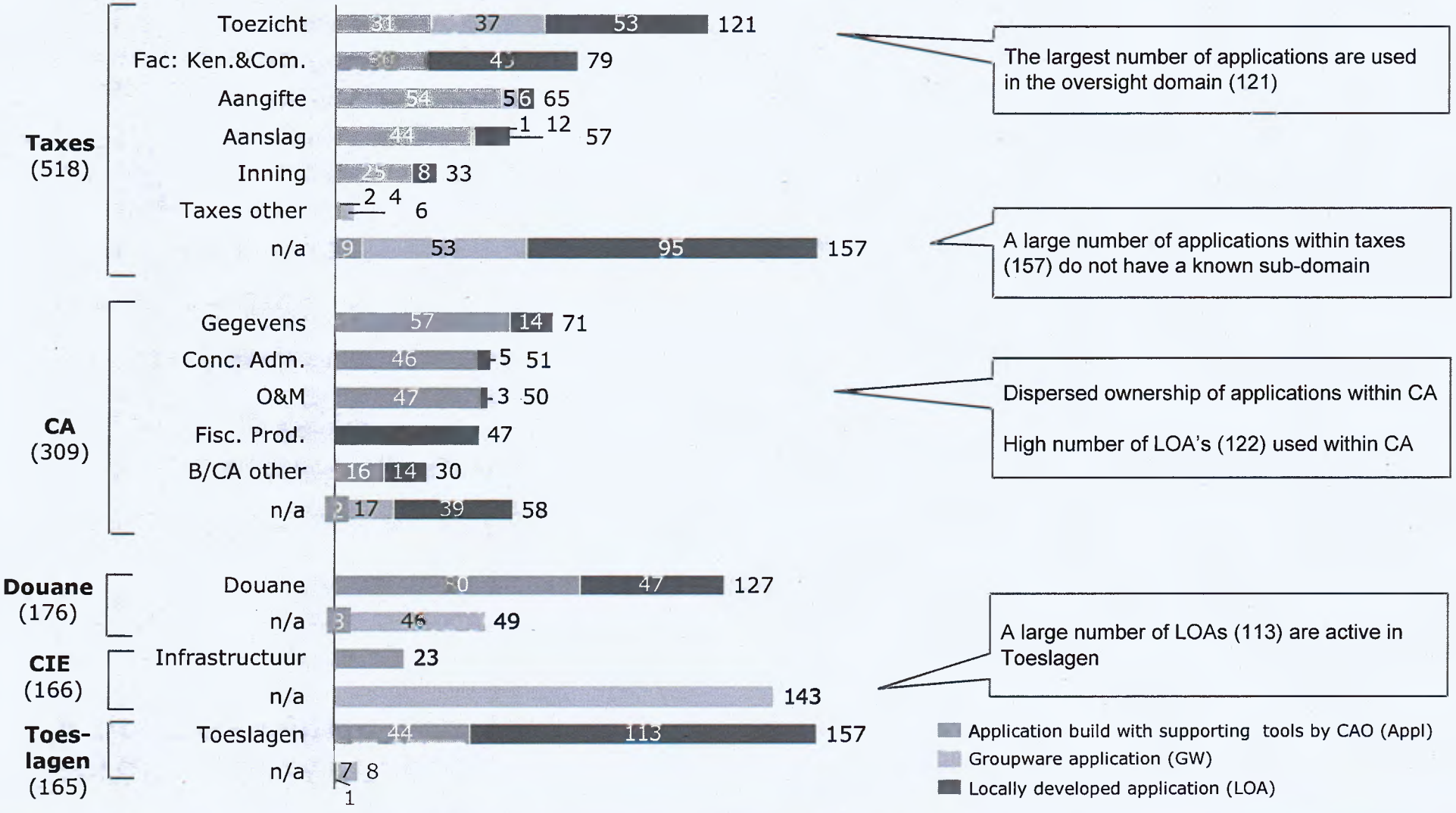
General information

- *Note:*
  - *Number of LOAs shown for some BUs should ideally be normalised for size/complexity*

- A recent rationalization effort was launched to reduce the number of applications
- Rationalization strategy for individual applications is determined by an APW questionnaire and the Gartner Method
- A total of 1.555 applications have been identified so far
- More than 85% of all identified applications are owned by:
  - Belastingen
  - CA
  - Douane
  - CIE
  - Toeslagen
- 95% of all identified LOA's are owned by the those same groups (see LOA landscape overview)
- Only 4% of all applications do not have a known business unit owner

Source: Rationalisatielijst Freeze 2015-11-12.xlsx

3 Overall data landscape
Application landscape overview (1/2)

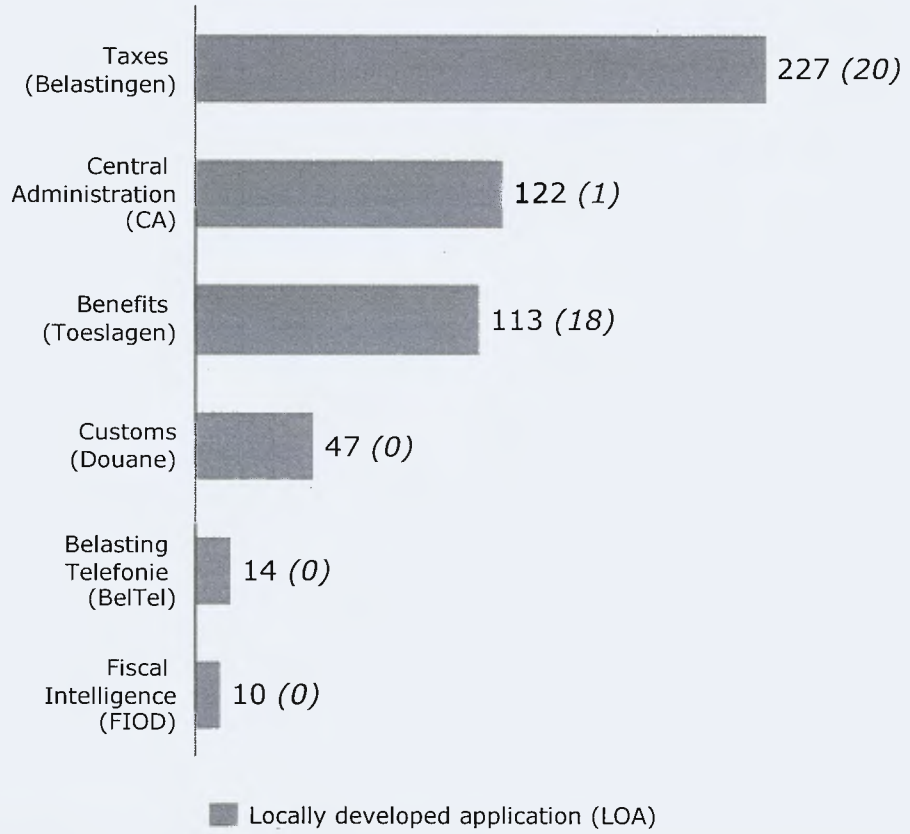


Note: Taxes other = BV, HRM, IMB, O&M and Prod. Best; CA other = Fac:Diensten, Prod.Best, Massaal innen, Massale productie
Source: Rationalisatielijst Freeze 2015-11-12.xlsx

3 Overall data landscape
LOA landscape overview

Overview of registered LOAs

Split of registered LOAs across BUs
(n = 533 LOAs, number of internalised LOAs in brackets)



General information

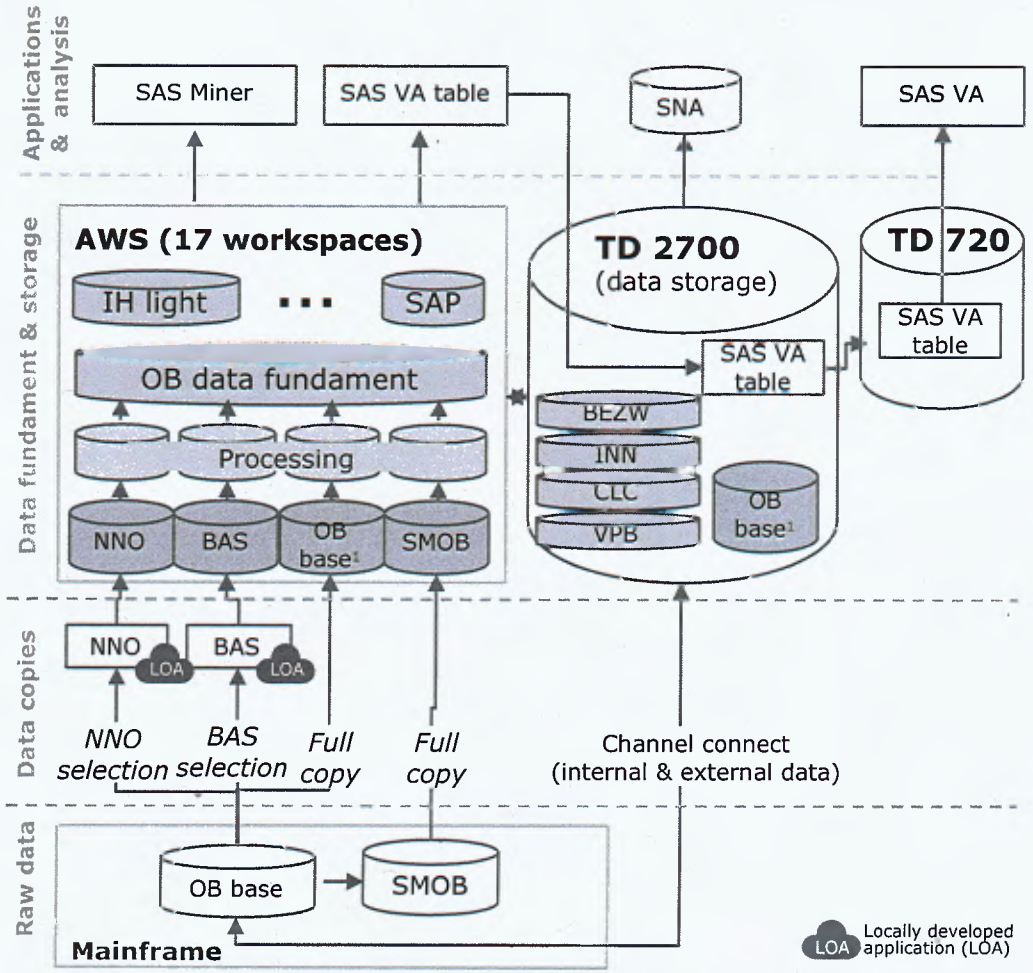
- *Note:*
  - *Number of LOAs shown for some BUs should ideally be normalised for size/complexity*
  - *Additional LOAs to be identified across BUs*

- A total of 533 LOAs have been officially and voluntarily registered within the inventory and classified important (unofficial number of LOAs expected to be higher)
  - Highly diversified functionality across LOAs (currently no formal categorisation applied)
  - LOAs mostly developed to fill a functionality gap, but left to "serve the purpose" thereafter
- Rationalisation plan started beginning of 2015, with 39 LOAs already internalised by IM (~7% of total), increasing number expected by end of 2015
- No standardised process in place to ensure submission of all newly developed LOAs to Information Management and their future evaluation or replacement / internalisation (LOA life-cycle)
- Typical characteristics of LOAs:
  - Locally developed applications, based on available software / platforms (MS suite, Lotus Notes, etc.)
  - Local responsibility within business unit
  - Storage often on personal computers
  - Limited documentation, scalability and access management

Source: Rationalisatielijst Freeze 2015-11-12.xlsx

3 Overall data landscape
Exemplary deep-dive: BI&A data fundament OB

Overview *(illustrative)*



General information

- Within BI&A data fundaments are used as a basis to build analysis on
- The OB (Omzetbelasting) data fundament is an example of altogether seven data fundaments already implemented, incl. regular updates within BI&A (as per Oct 2015)
- Data is copied from internal data sources (OB base / SMOB) and partially processed by two LOAs (NNO box / BAS) before it is put into BI&A's brown data layer (raw data layer)
- Updates of the data fundaments are well-documented, but require some manual data processing (see next page)
- Resulting data fundaments (pink layer) are used for analysis with e.g. SAS Miner, SNA (Social Network Analysis) or SAS VA

Note: The OB data is copied directly from the mainframe into the AWS and the TD 2700 environments
Source: Expert interviews BI&A form October 2015

3 Overall data landscape
Exemplary deep-dive: update procedure of OB data fundament

OB[1] data fundament is updated weekly through a manual process based on detailed manuals. Daily checks of the underlying source data bases are used to detect if an update is necessary

#	Task	Comments	Process Automation
1	Check if the source data was refreshed	-	manual
	a) Make and process NNO dump (conditional)	Only if step 1 returns a red indication	
	b) Make and process BAS dump (conditional)	Only if step 1 returns a red indication	
	c) Check again if the source data was refreshed (conditional)	Only if step 1 returns a red indication Potential 'hiccup' step	
2	Validate the source files	Run script and wait Potential 'hiccup' step (need of manager in case of failure)	
3	Start batch INN + OB	12 hour waiting step	
4	Check the execution, make dump	An e-mail signals successful execution Potential 'hiccup' step (need of manager in case of failure)	
5	Retrieve QA report on the data fundament	-	
6	E-mail Theo vd Tweel upon success	-	

Source: Expert interviews BI&A form October 2015

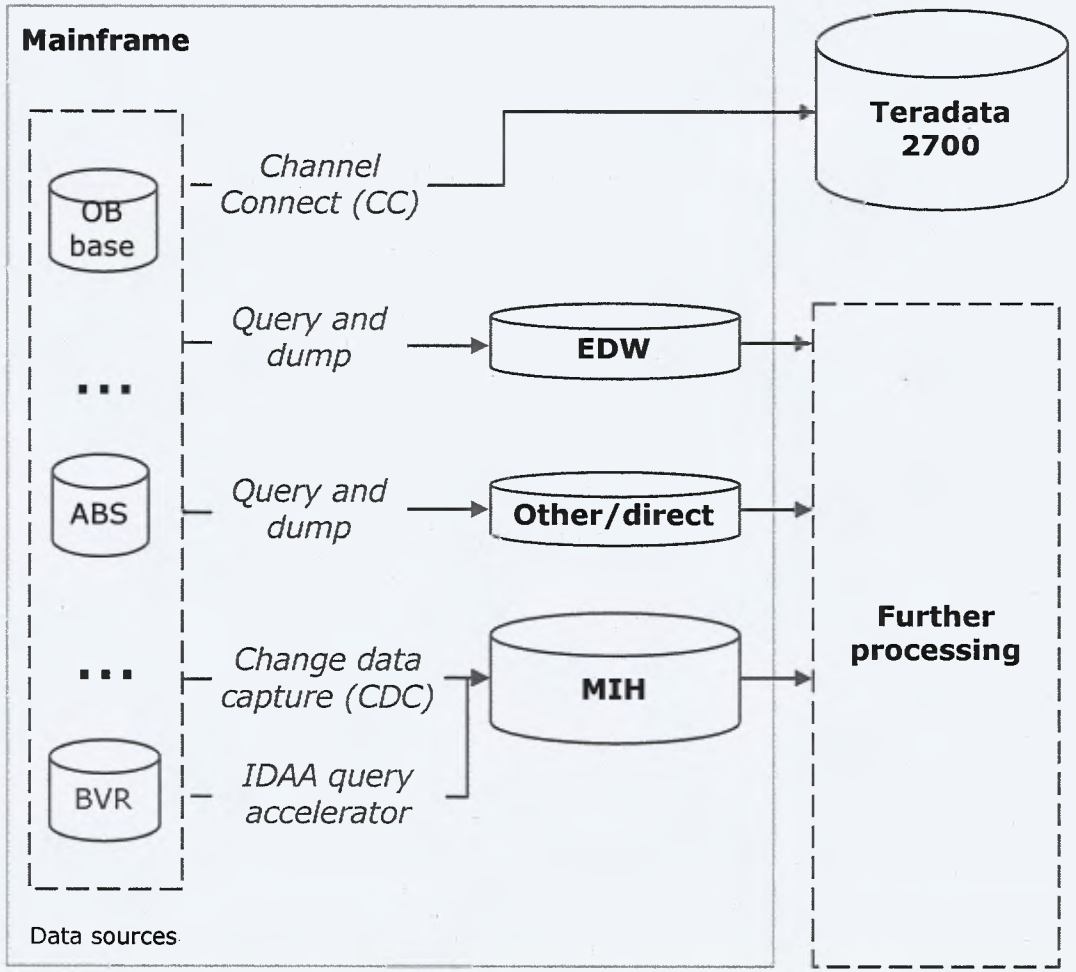
3 Overall data landscape
Exemplary deep-dive: excerpt on policies and frameworks *(non-exhaustive)*

Type	Policy	Source	Size	Contents	Scope
Security	Handbook Security BD	Handboek Beveiliging Belastingdienst, 2014	4 parts ~250 pages	Prescribes how the organisation should deal with data security	BD
	10 commandments of information security	De 10 geboden van informatiebeveiliging, 2015	5 slides	Ten things to do when dealing with data	BI&A
	Privacy Impact Assessment	PIA Proces	8 slides	Introduction on what the PIA questionnaire is, why it should be done and how to do one	BD
Process	Code for information quality	Code voor Informatie-kwaliteit, Nov 2013	6 parts ~85 pages	Gives guidelines on how to ensure data quality, including documentation and structure	NLIQ[1]
	Quality guidelines	BCA IP proces, 2015	1 poster	Key words relating to data quality	CA
	QA Checklist Appeal	QA Checklist Bezwaar, 2015	4 pages	Checklist to ensure that data, code and production are in order for the Complaint data fundament	n/a
	Standards and guidelines data fundaments	Standaards en Richtlijnen Datafundamenten	10 pages	Very technical guidelines, e.g. on how to name columns, how to design a database and what kind of documentation to write	n/a
	White paper data foundations	BI&A Datafundament, Oct 2015	12 pages	Guidelines on proper database management, including documentation and quality assurance	BI&A
	Data offering architecture	Domeinarchitectuur gegevens sectie 1, GA01-GA08	8 paragraphs	Principles on how to offer data	CA
	Data Domain	Domeinarchitectuur gegevens sectie 1, DG01-DG10	10 paragraphs	Principles on how to manage data	CA
	NORA	Domeinarchitectuur gegevens sectie 1, AP12-AP18	7 paragraphs	General principles on data	CA
	Customer registration	Domeinarchitectuur gegevens sectie 1, KR01-KR02	2 paragraphs	Principles for customer registration	CA
	Control and production	Domeinarchitectuur gegevens sectie 1, BV01-BV08	8 paragraphs	Principles for control and production	CA

1NLIQ = Platform Informatiekwaliteit Netherland

3 Overall data landscape
Exemplary deep-dive: mainframe extraction pathways

Data extraction pathways *(illustrative)*



General information

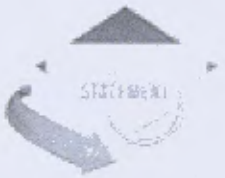
- Within the organisation there are multiple ways to extract data from source data bases
- Extracted information is further processed in different ways
  - Operational risks of differing results
  - Risk of differing data definitions
  - Fragmented accountability for "the same data"
- Due to diversity of systems deployed, different extraction pathways have different degree of suitability (i.e. speed, complexity, etc.)

Source: Expert interviews BI&A form October 2015

Table of content

4 Use cases Overview

Use case #1
Pre-filled income tax statements



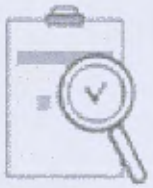
Objective

Understanding the yearly process of information collection and processing for the pre-filling income tax statements provided to the tax payer

Focus

Overall process (and further deep-dive)

Use case #2
Base customer registration



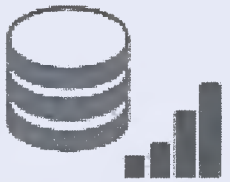
Objective

Understanding how a person (individual vs. legal entity / company) is registered within Belastingdienst

Focus

Focus on new customer registration, excl. update / delete processes

Use case #3
Data provided to CBS



Objective

Understanding what data Belastingdienst provides to the national statistics institute (CBS), how is the data gathered and processed

Focus

Overall process (high-level)

Use case #4
Database auto

Objective

Understanding how is data gathered, processed, stored into the auto database and ultimately the purposes, for which it is used

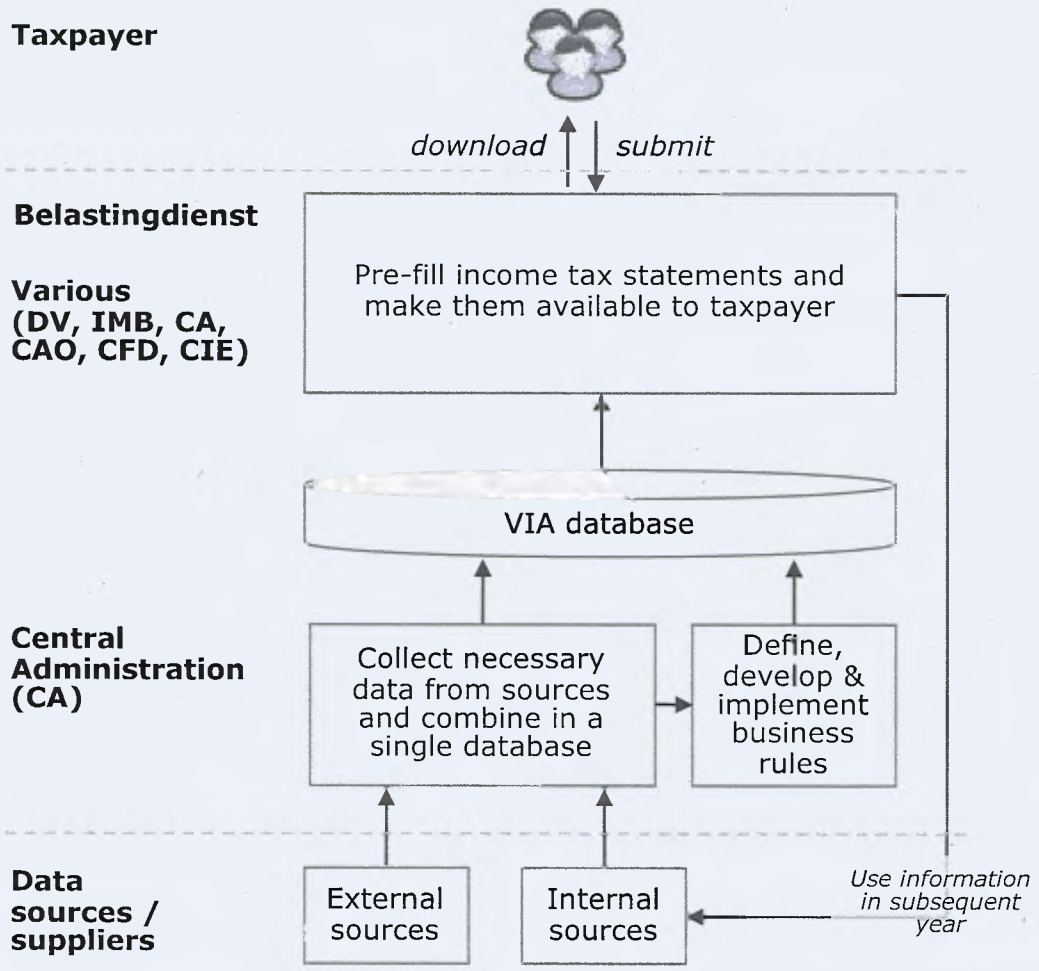
Focus

Focus on data collection for automated number plate recognition (ANPR)

Table of content

4 Use case #1: pre-filled income tax statements General information

Process overview *(illustrative)*

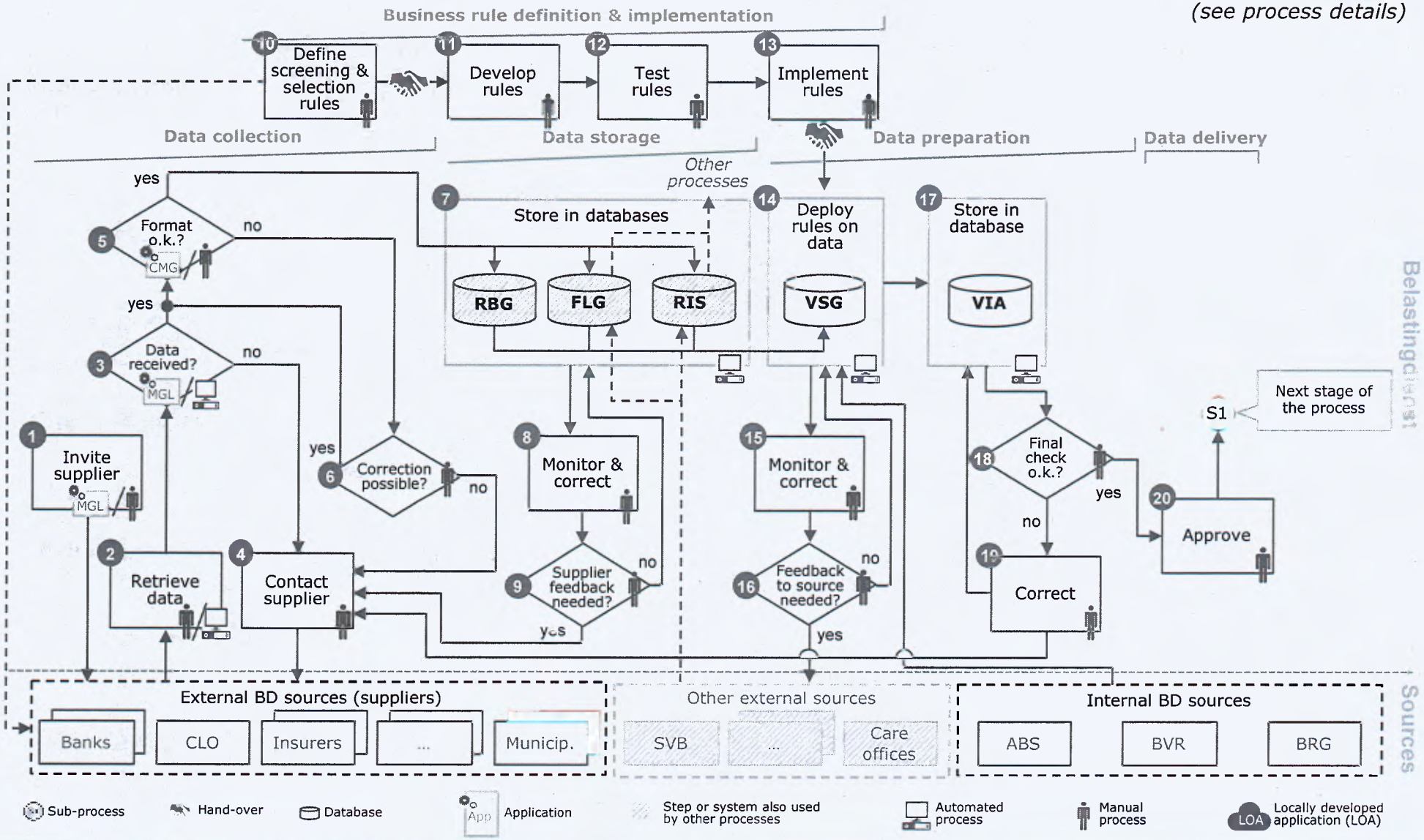


General information

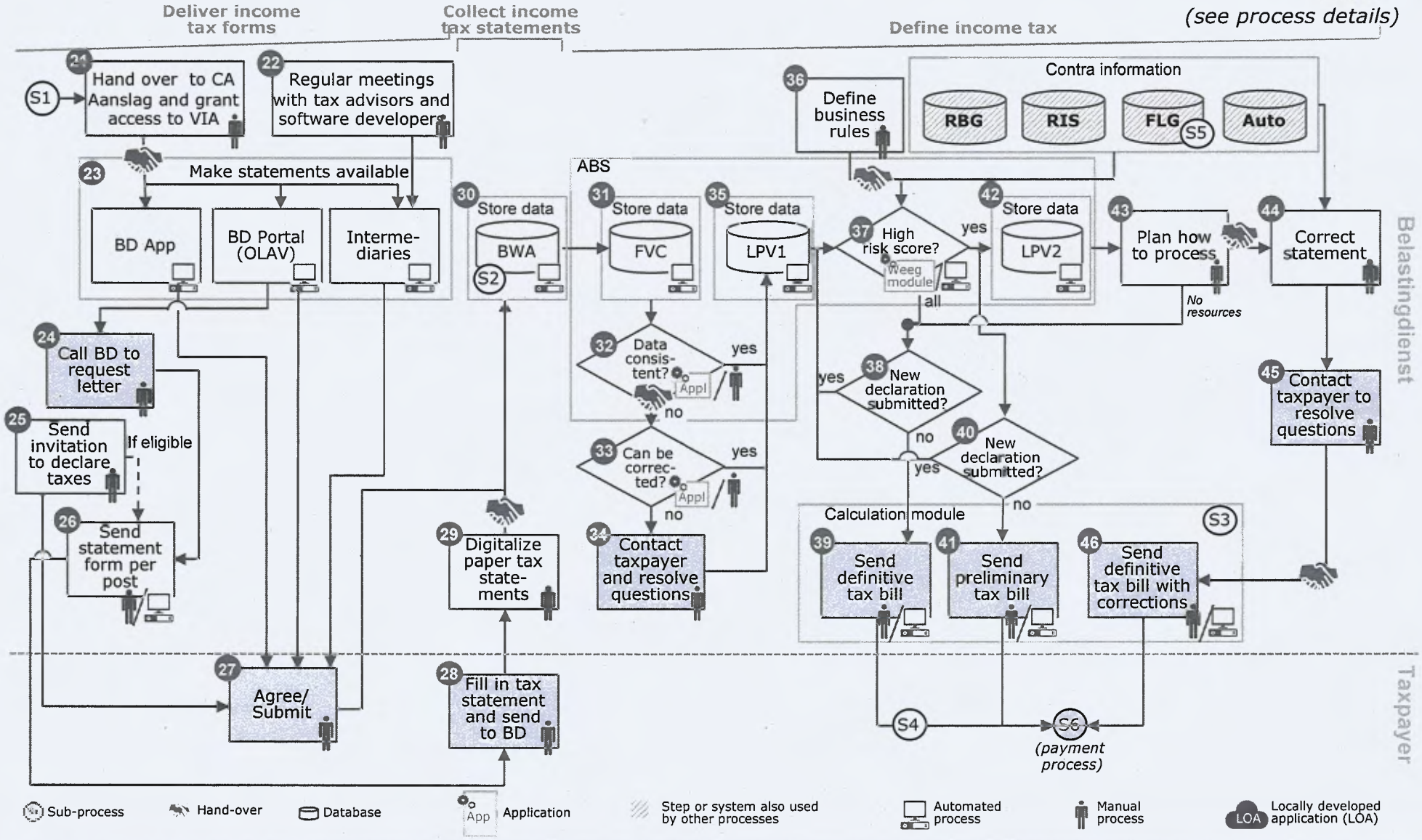
- Tax statements are submitted by taxpayer once a year (March 1st - April 1st)
- Taxpayer can choose to approve pre-filled statement through Belastingdienst's App, access and adjust it through BD's online Portal (OLAV), use intermediary services (tax advisors) or receive and fill-in paper forms
- Annual information needed for the pre-filling of the income tax statements is collected and processed between Jan and Feb each year (even though monthly information from some sources is gathered throughout the year for analytical purposes)
- Pre-filled income tax statements are then made available to the customer by March 1st of the year
- Data from ~20 data sources is used for the pre-filled income tax statements, focusing on:
  - Timely availability of data
  - Completeness
  - Consistency and accuracy

4 Use case #1: pre-filled income tax statements Process map (1/2)

(see process details)

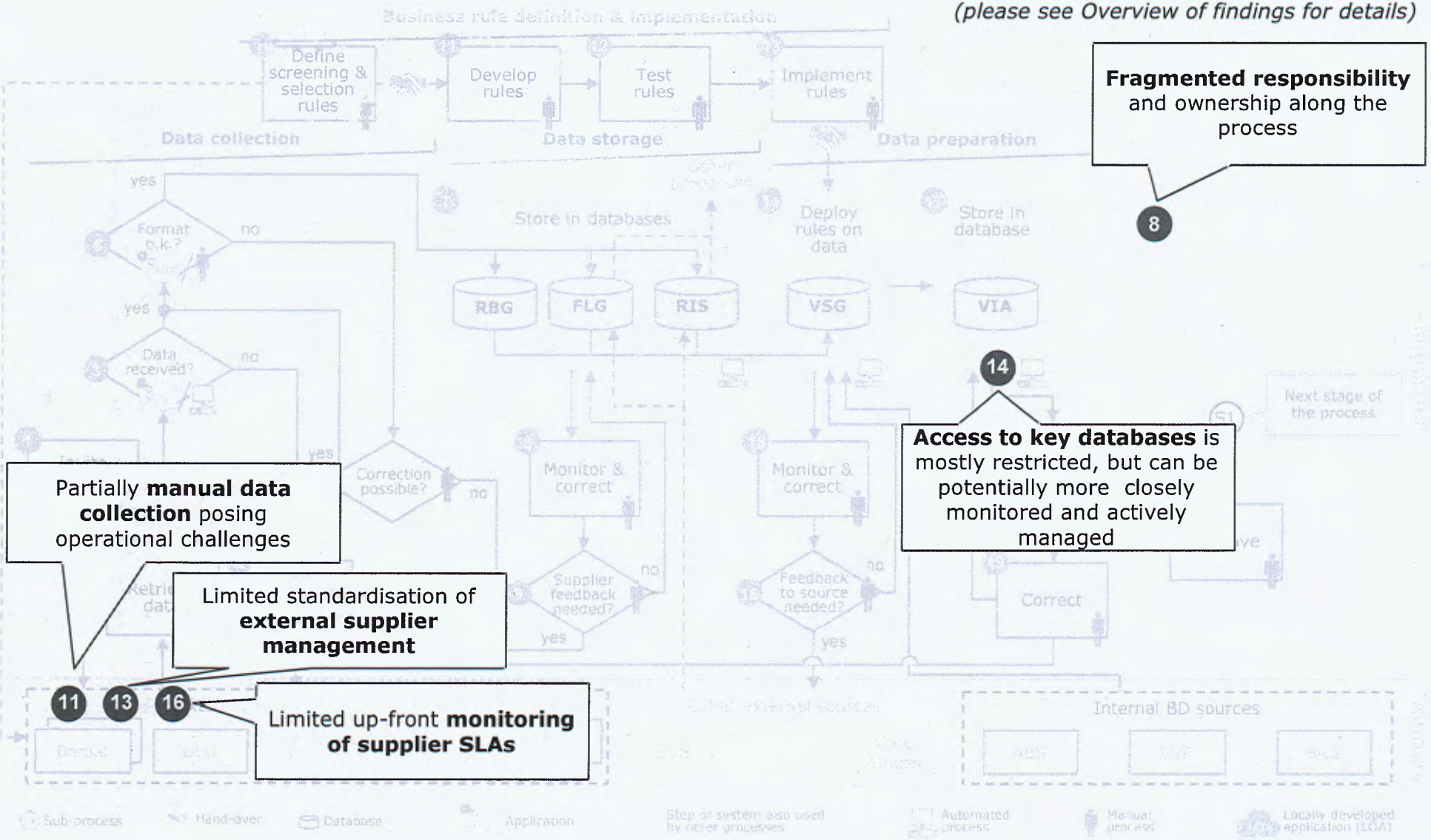


4 Use case #1: pre-filled income tax statements Process map (2/2)



4 Use case #1: pre-filled income tax statements Key observations (1/2)

(please see Overview of findings for details)



Fragmented responsibility and ownership along the process

8

14

Access to key databases is mostly restricted, but can be potentially more closely monitored and actively managed

Partially **manual data collection** posing operational challenges

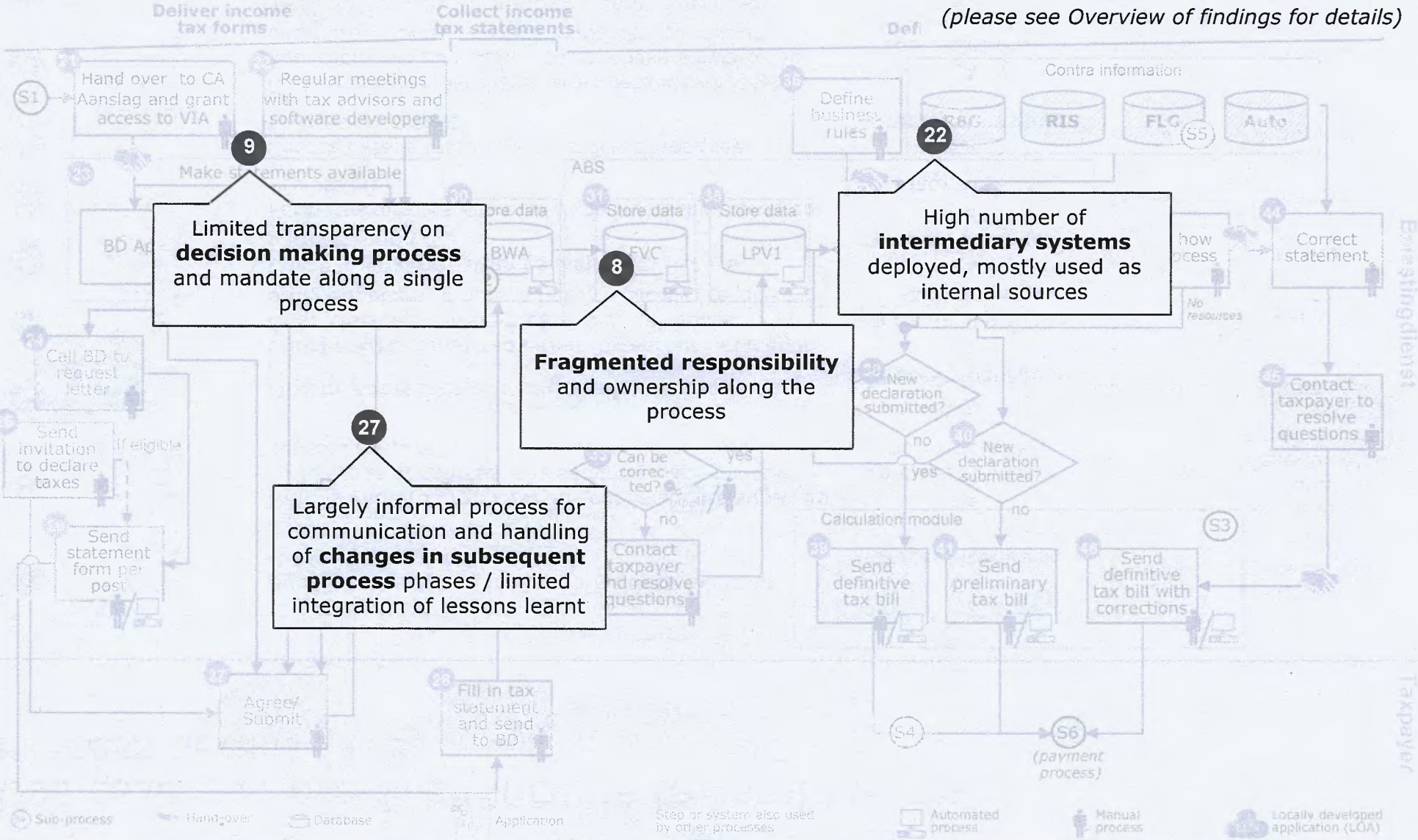
Limited standardisation of **external supplier management**

11 13 16

Limited up-front **monitoring of supplier SLAs**

4 Use case #1: pre-filled income tax statements Key observations (2/2)

(please see Overview of findings for details)



9 Limited transparency on **decision making process** and mandate along a single process

8 **Fragmented responsibility** and ownership along the process

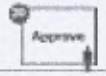
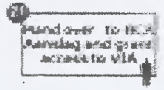
27 Largely informal process for communication and handling of **changes in subsequent process** phases / limited integration of lessons learnt

22 High number of **intermediary systems** deployed, mostly used as internal sources

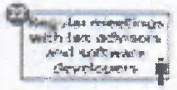
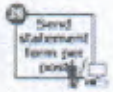
4 Use case #1: pre-filled income tax statements Process details (1/5)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
1		Supplier receives an invitation for data collection (trigger through MGL)	CA (process manager)	Annually	Automated (gets initiated once)
2		Data is gathered from various external data suppliers (~20 types of sources, see separate page on data sources for details)	CA (process manager per data type)	Annually	Automated / Manual (depending on supplier contract)
3		MGL monitors if data is (physically) received	CA (process manager)	Annually	Automated
4		Supplier gets contacted either by account manager (municipalities / system banks) or call center (all other suppliers) if data is not (physically) received	CA (account manager / call center)	Ad-hoc	Manual
5		Check if data formatted as defined in SLAs is performed in CMG	CA (process manager)	Annually	Manual
6		Format errors are examined and manually corrected (if possible)	CA (data expert)	Ad-hoc	Manual
7		Source data is stored in three databases (see sources for details)	CA (process manager)	Annually	Automated
8		Raw data in the databases (raw data warehouses) gets monitored by dedicated database steward (per database), corrections are implemented manually	CA (data steward)	Monthly / Annually	Manual
9		Feedback to supplier or internal source necessary if severity of corrections high or if data cannot be corrected by data steward	CA (data steward)	Monthly / Annually	Manual
10		Screening and selection rules defined by an interdisciplinary team, based on changes in taxation to previous year	Interdisc. team (data experts, tax experts, DV experts)	Annually	Manual

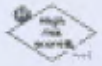
4 Use case #1: pre-filled income tax statements Process details (2/5)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
11		Quality assurance rules developed based on business rules	CAO	Annually	Manual
12		Developed rules are tested for implementation on a subset of data	CAO	Annually	Manual
13		Tested rules are implemented into VSG application	CAO	Annually	Manual
14		Rules are deployed on complete datasets within VSG	CA (data analyst)	Annually	Automated
15		Data in the VSG application is monitored for completeness and consistency by a dedicated data steward	CA (data steward)	Annually	Manual
16		Feedback to supplier or internal source necessary if severity of corrections high or if data cannot be corrected by data steward	CA (database steward)	Annually	Manual
17		Once data on VSG is complete and tested it gets copied to VIA database	CA (dedicated person)	Annually	Automated
18		A final check is performed on the VIA database	CA (dedicated person)	Annually	Manual
19		If final check fails, corrections are carried over	CA (database steward)	Annually	Manual
20		VIA database gets approved by CA management and is made available for use	CA (management)	Annually	Manual
21		Handover of accompanying documentation on the VIA database to CA Aanslag, and granting access to the VIA database to all available channels (BD webportal (OLAV), BD app, intermediaries) on March 1 at 00:00h	CA	Annually	Manual

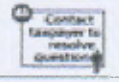
4 Use case #1: pre-filled income tax statements Process details (3/5)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
22		Changes in taxation and the VIA process are amongst the topics discussed in quarterly meetings with tax advisors (where CA is present) and is covered in half-yearly meetings with software developers (held by CA)	CA	Annually	Manual
23		Taxpayers can: view their pre-filled income tax statemnets and agree via app; adjust and submit via webportal (OLAV) or through intermediaries such as tax advisors	IMDV (design) CA (data) CIE (execution)	Annually	Automated
24		Customers previously used electronic information channel and thus not having received automatically a paper form can call BelTel to request one (optional)	Taxpayer	Annually	Manual
25		Invitations to file tax statements are sent to taxpayers (Jan 15th - Feb 15th) by mail and/or online - 22 categories of recipients in total	CA (process) CIE (sends letters)	Annually	Semi-automated
26		For taxpayers born before Jan 1 1946 without online accounts, tax forms are sent in paper form between Jan 15th and Feb 15th together with the invitation to file their tax statement	IMDV (design) CIE (infrastructure) CA (data)	Annually	Semi-automated
27		Taxpayers approve and submit their pre-filled tax declaration online between March 1st and May 1st	Taxpayer	Annually	Manual
28		Taxpayers fill-in and submit their paper tax declaration between March 1st and May 1st	Taxpayer	Annually	Manual
29		Paper tax forms are sent to the Unit Limburg (ULB / CFD) where they are scanned and digitalized	CFD	Annually	Manual

4 Use case #1: pre-filled income tax statements Process details (4/5)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
30		Tax statement information is collected from BD's web portal (OLAV), BD's app, intermediaries and ULB/ CFD (digitalized paper tax statements) and stored in the BWA database	CA	Annually	Automated
31		Data from BWA is stored in FVC, the first point of entry in ABS (data transferred only after the first of three annual ABS releases on April 1st)	CA	Annually	Automated
32		Consistency checks on the data are performed in the FVC (Ø 1-2% of the data sets fail the check)	CA	Annually	Manual
33		If consistency check fails an attempt is made to correct the information by the Unit Limburg (ULB)	ULB	Annually	Manual
34		Taxpayer is contacted if the data cannot be corrected	CA/ULB	Annually	Manual
35		Consistent data is stored in LPV1	CA	Annually	Automated
36		Business rules are defined (starting 9 months before they are implemented in the risk assessment, ~300 business rules in total)	EH&I	Annually	Manual
37		Tax statement risk score is assessed based on the pre-defined business rules and contra data from the three databases (RBG, FLG, RIS). Data is processed in batches of 250.000 entries / day	CA (Management) CIE (execution) IMB (design)	Annually	Automated
38		Before a record is processed in the calculation module, it is checked whether a new declaration was submitted	CA	Annually	Automated
39		If a statement is not deemed to have any associated risks, a definitive tax bill is sent to the taxpayer	CA/CIE	Annually	Semi-automated

4 Use case #1: pre-filled income tax statements Process details (5/5)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
40		Before a record is processed in the calculation module, it is checked whether a new declaration was submitted	CA	Annually	Automated
41		If a tax statement has a high risk score, a preliminary tax statement is sent to the taxpayer	CA/CIE	Annually	Semi-automated
42		Data with a high risk score is stored in LPV2	CA/CIE	Annually	Automated
43		A team of three regional directors and EH&I manager come together to discuss which high-risk tax statements can be handled based on capacity, volume and competency. If resources are not sufficient, part of the data sets (least risky ones) will be sent directly to the calculation module	Three regional directors, EH&I manager	Annually	Manual
44		Higher risk cases are pulled off LPV2 and handled by local offices according to planning. There are three scenarios: 1. Corrections based on contra-data: handled by an automated letter with indicated corrections 2. Questions: handled manually by contacting the customer 3. Interpretations of the law: require individual attention and contacting the customer	Local tax offices	Annually	Manual
45		Taxpayers are contacted to resolve questions	Local tax offices	Annually	Manual
46		If corrections were made, the tax statement and corrections are forwarded to the calculation module where a definitive tax bill (with corrections indication) is sent to customer, and the details are forwarded to the payment management system	CA/CIE	Annually	Semi-automated

4 Use case #1: pre-filled income tax statements Sub-processes related to the VIA process (non-exhaustive)

Sub-process	Name	Description
S1	Link within VIA process	-
S2	Text based fraud detection	The weegmodule cannot do text-based fraud detection - this is performed on all the submitted tax statements in BWA. An example for a text-based fraud detection is donations to grandchildren
S3	Large declaration control	Before any tax declarations are sent out any declarations obligating the Belastingdienst to pay €14.000 or more are flagged and checked in a separate process to see if they are justified
S4	Re-submission as objection	If a taxpayer re-submits his tax declaration when the first submission has already resulted in a definitive tax bill, the re-submission is considered as an objection. These are handled by a locally developed application (HGA). If they are not easily resolved, they are forwarded to PDB (Particulier, Dienstverlening, Bezwaar)
S5	Nabeschrijving	After a tax campaign a separate process identifies taxpayers who are owed money, but did not declare taxes, or taxpayers who should owe money and did not declare taxes. These are contacted to declare their taxes (in September)
S6	Payment process	Information about tax declarations is sent to the Belastingdienst system that processes the payments (COA). This process also includes treatment of late payments

4 Use case #1: pre-filled income tax statements Data sources

Type	Source	Abbr	Collected data	Freq.	Collection	Stored in
External supplier	Uitvoeringsinstituut Werknemersverzekeringen	UWV	• Cumulative year wage	Monthly & Annually	Digital channel	**FLG** Fiscale Loongegevens
	Banks	-	• Payments • Savings • Loans • Investment data	Annually	Electronic message traffic (EBV)	**RBG** Registratie Bank Gegevens
	Centraal Administratie Kantoor	CAK	• Own contribution to healthcare • Childminder	Annually	DVD/CD	**RIS** Renseignement en Informatie Systeem
	Municipalities	-	• Property values	Monthly		
	Dienst Uitvoering Onderwijs	DUO	• Student loans	Twice annually	DVD/CD	
	Uitvoeringsinstituut Werknemersverzekeringen	UWV	• Young handicapped data	Twice annually	DVD/CD	
	Insurers	-	• Insurance products	Monthly	Paper/DVD/CD	
	Central Liaison Office	CLO	• Belgian & German pensions • ESRR interests	*n/a*	*n/a*	
Internal sources	Aanslag Belasting Systeem	ABS	• Saldo VA current year • Previous year statement	*n/a*	*n/a*	**VSG** Verzamelen en Samenstellen VIA-gegevens
	Beheer van Relaties	BVR	• VIP list • Name • Adress • Marital state, etc.	Daily	*n/a*	
	Beheer Rekening Gegevens	BRG	• BSN number • Bank account number	*n/a*	*n/a*	

4 Use case #1: pre-filled income tax statements
Data sources used for data enrichment of intermediate databases

Type	Sources	Abbr.	Collected data	Frequency	Collection	Stored in
External suppliers	Inhoudingsplichtigen	IHP	Cumulative year wage	Annually	DVD/ File oriented service (FOS)	**FLG** Fiscale Loongegevens
	Banks	-	Saving products (eigen woning, lijfrente sparen)	Monthly & annually	DVD/CD	
	Wealth managers	-	Dividends, securities	n/a	n/a	
	College voor Zorgverzekeringen (Zorginstituut Nederland)	CVZ	Health insurance status	n/a	EBV	
	ESSR[1] countries	-	Foreign savings accounts	Annually	paper/CD/DVD /EBV	
	Funds	-	Study costs Philips employees	Annually	DVD/CD	
	Childcare centers	-	Childminder data	n/a	n/a	
	IGU[2] countries	-	Internationale Gegevens Uitwisseling	Four times annually	DVD/CD	**RIS** Renseignemen ten Informatie Systeem
	Lease companies	-	Car lease data	Annually	DVD/CD	
	Ministry of foreign affairs	-	Subsidized home buying data	Annually	DVD/CD	
	Nederlandse Spoorwegen	NS	Public transport data	Annually	DVD/CD	
	Transporters	-	City and regional transport	Annually	DVD/CD	
	Rijksdienst Wegverkeer	RDW	Boat data	Annually	DVD/CD	
	Sociale Verzekeringsbank	SVB	Foreign employment data (detacheringsverklaring)	Four times annually	DVD/CD	
	Translators, publishers, PR companies, education	-	Tax collection data (IB47)	Annually	paper/DVD/CD	
	Care offices	-	Person bound budget for healthcare (PGB)	Twice annually / ad hoc	paper/DVD/CD	

1 Europese Spaarrenterichtlijn
2 Internationale Gegevens Uitwisseling

4 Use case #1: pre-filled income tax statements Intermediate databases and applications (1/2)

Name	Database/ application	Description	Update frequency	Internal use by	External use by	Responsibility
FLG Fiscale Loongegevens	Database	Annual salary data	Monthly	System: ABS, AIG, IND, TBU/TSZ, VSG, VIT	CBS, municipalities, GSD, DUO, ministry of agriculture, social funds, SVB/PUR, agentschap NL, UWV	CA
RBG Registratie Bank Gegevens	Database	Bank data: interest and balance data, loan and investment data	Annually	Org. unit: CLO System: ABS, BRG, IND	CBS	CA
RIS Renseignementen Informatie Systeem	Database	Additional taxpayer information: wealth, assets, insurance, transport, foreign accounts/ employment etc.	Monthly	System: ABS, EDW, TBU/TSZ	CBS	CA
MGL Managen Gegevensleveringen	Application	Delivery data, contract data, supplier data	Realtime	ECM, CMG	n/a	CA
CMG Controle Module Gegevens	Application	Bank data in raw form (XML format)	Annually	MGL, RBG, ECM	n/a	CA
VSG Verzamelen en Samenstellen VIA gegevens	Application	Master data, salary, property valuations, assets, debt, insurance, etc.	Annually	VIA	n/a	CA

4 Use case #1: pre-filled income tax statements Intermediary databases and applications (2/2)

Name	Database/ application	Description	Update frequency	Internal use by	External use by	Responsibility
VIA Vooringevulde aangifte	Database	Master data, salary, property valuations, assets, debt, insurance, etc.	Monthly / Annually	Dienstver-lerning, BHS	Taxpayer (via BelTel)	CA
ABS Aanlslag Belastingen Systeem	Application	Business rules, tax statements (and 10 years historical)	Annually	VIA	n/a	CA
FVC Fiscale Voor Controle	Application	Tax statement information	Annually	LPV1	n/a	CA
LPV1 Logistieke Parkeer Voorziening 1	Database	Consistent tax statement data	Annually	LPV2	n/a	CA
LPV2 Logistieke Parkeer Voorziening 1	Database	High-risk tax statement cases with risk scores	Annually	Local offices	n/a	CA
BWA Beheer Werkvooraad Aanslag	Database	Tax statement information	Annually	ABS (FVC)	n/a	CA
Rekenmodule	Application	Tax statement data with risk scores and corrections if applicable	Annually	COA, CIE	Taxpayer (via CIE)	IMDV (design) BCA (data) CIE (execution)
Weegmodule	Application	Consistent tax statement data	Annually	LPV1, Rekenmod ule	n/a	BCA (mgmt.) CIE (execution) IMB (design)

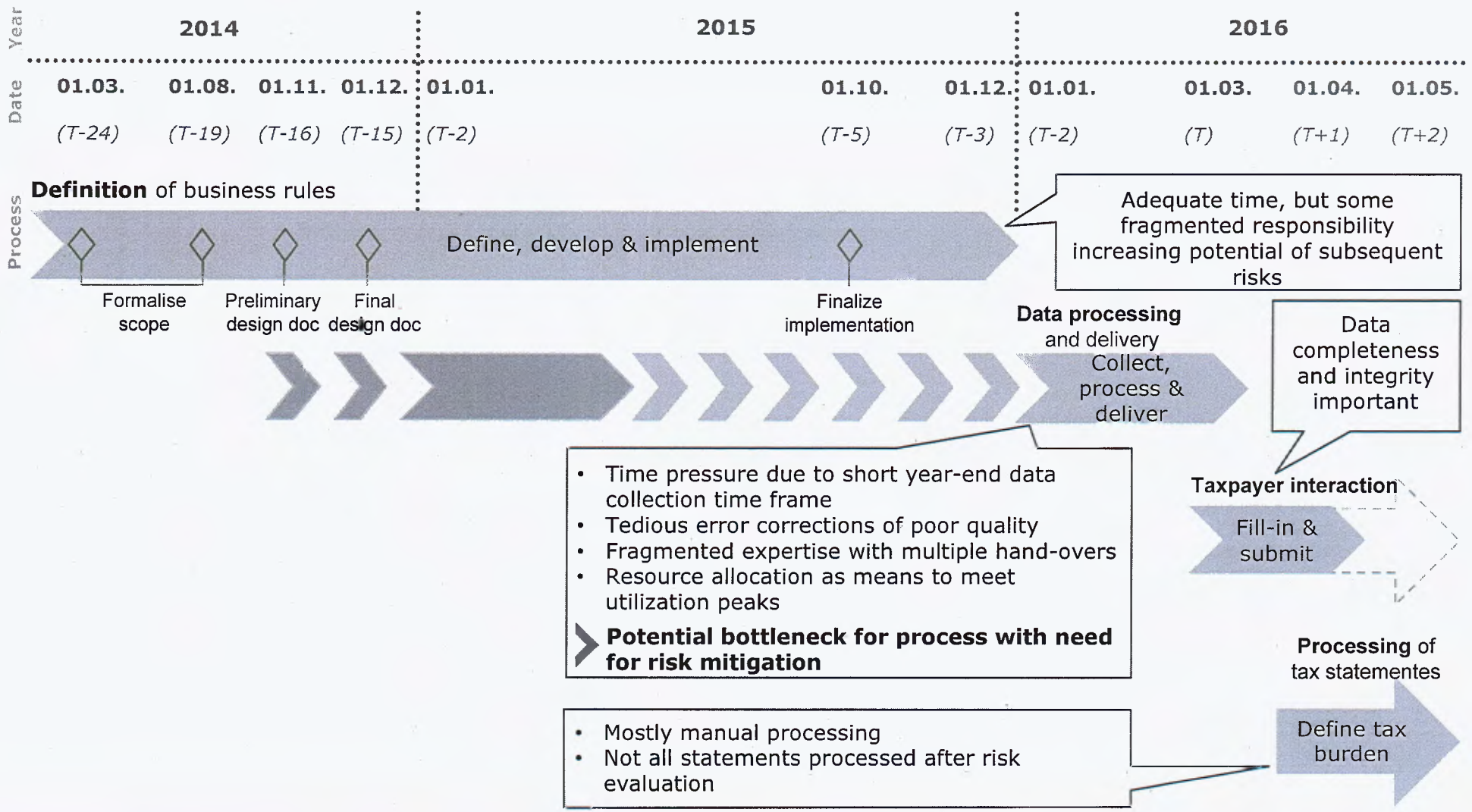
4 Use case #1: pre-filled income tax statements
Relevant organisational units

Abbr.	Organisational unit (Dutch)	Organisational unit (English)	Core responsibilities
CA	Centrale Administratie	Central Administration	Manage data streams within the organisation
CFD	Centrum voor Facilitaire Dienstverlening	Centre for Facility Services	Provide facility support for the organisation
CIE	Centrum voor Infrastructuur en Exploitatie	Centre for Infrastructure and Exploitation	Maintain infrastructure
EH&I	Expertisecentrum Handhaving & Intelligence	Expertise Centre Enforcement and intelligence	Perform oversight, research and knowledge development
IMB	Informatie Management Belastingen	Information Management Taxes	Design processes and tax business rules
IMCA	Informatie Management Centrale Administratie	Information Management Central Administration	Plan and support internal data streams and processes
IMDV	Informatie Management Dienstverleningen	Information Management Service Provisions	Design processes
ULB	Unit Limburg	Unit Limburg	Process tax statements

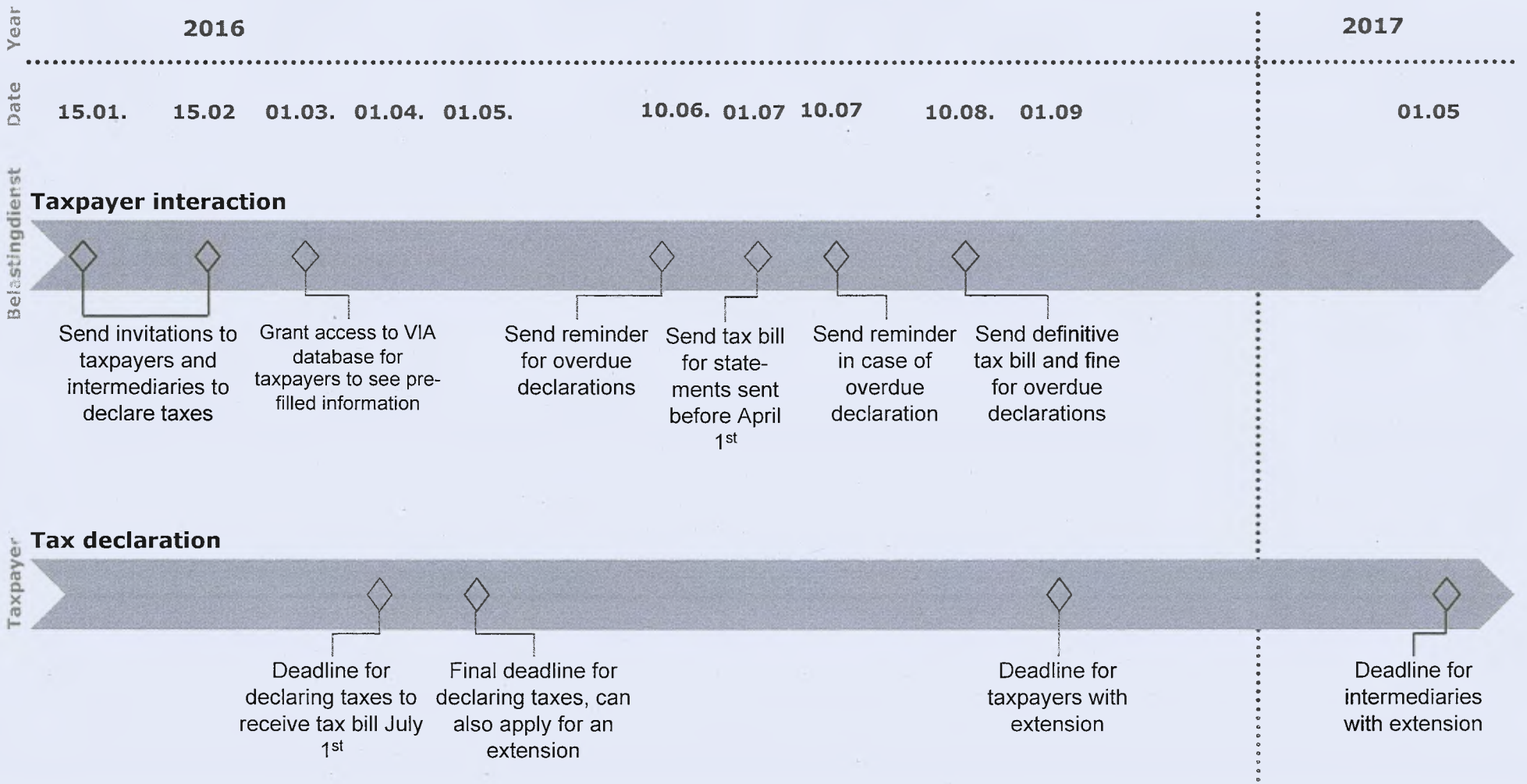
4 Use case #1: pre-filled income tax statements Key process metrics

Metric	Pre-filled income tax statement process		Implication
# Sources	A total of **11 source types** deployed • 3 internal sources • 8 external supplier types (resulting in >4.000 individual data sources)	›	**Variety of sources** deployed with different degree of automatization
# Process steps	A total of **46 process steps** were identified within the pre-filled income tax statement process of which: • 13 automated • 5 semi-automated • 28 manual	›	**Many manual process steps** (~60%), mostly around data checks
# Hand-overs	Approx. 8 hand-overs, most important being the hand-over of the VIA database from CA to Services (Dienstverlerning) before March 1st	›	Several **hand-overs** of responsibility
# Control steps	A total of **6 control steps** are performed throughout the process (mostly manually)	›	Many control steps, but **content checked at a rather late stage** in the process
# Intermediate systems and applications	A total of **14 intermediary databases / applications** is deployed throughout the process: • 7 databases • 7 applications	›	Deployment of **many intermediary systems** • Databases**:** some of which also used for other processes • Applications: often for formatting purposes

4 Use case #1: pre-filled income tax statements
Preparation for an income tax cycle (2015 taxes) – BD perspective



4 Use case #1: pre-filled income tax statements
Income tax cycle (2015 taxes) – combined perspective



4 Use case #1: pre-filled income tax statements Example: VIA database hand-over documentation

#	Document	Content	Delivered by	Delivered to
1	Vrijgave advies VIH 2014	Definitive release advice	J. Voskamp	G. van Cauter, J. Rolleman
2	Memo resultaat pre campagne test	Results of the pre campaign test	J. Kuikman	J.Voskamp
3	Vrijgave advies VIH 2014 – kwaliteit gegevens in VIA-base	Results of the OAG quality test of data in the VIA base	B. Vorstemans	L. Fokkinga, G. van Cauter
4	Memo bijzonderheden VIH 2014	Document with details of the peculiarities of that year's VIA data – details on exceptions and differing data streams	N. Peker, J. Voskamp	VIA beraad en vrijgavetafel VIH 2014
5	Rapportage t.b.v. het vrijgave-advies VIH 2014	High-level overview of data in the VSG database and results of quality checks	F. Noorland	-

4 Use case #1: pre-filled income tax statements Example: Processing taxpayer data changes

Situation

*What happens if a **taxpayer changes his account number** (account used for tax payments/returns) through the web portal?*

Processing by Belastingdienst

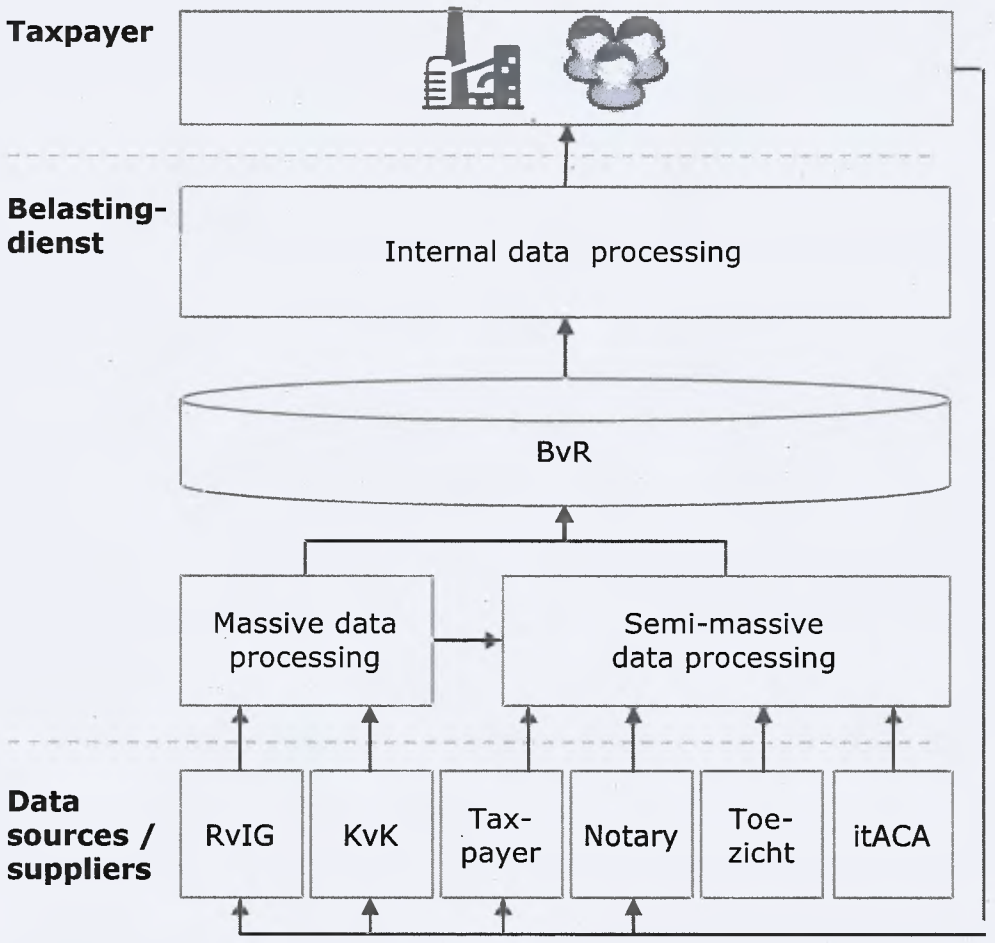
1. **Taxpayer enters the corrected account number** via the web portal
2. **Data is collected** automatically by Belastingdienst and stored in the internal BRG[1] database
3. Corrected **account number is checked** against existing account numbers associated to the particular taxpayer (RBG database):
   - If account number is "recognised":
     → it is updated in BRG (no subsequent signal to bank)
   - If account number is not "recognised":
     → the bank is contacted via standard procedure to check if the corrected account number is linked to the taxpayer
     - If yes: the account number is updated in BRG
     - If no:
       i. Corrected account number is entered in BRG with a 'to be validated' flag
       ii. Belastingdienst sends the taxpayer a letter requesting a proof that the account is linked to the him
       iii. Flag is removed once Belastingdienst receives the proof

1 BRG: database storing the account data (Beheer van Rekening Gegevens)

Table of content

4 Use case #2: base customer registration General information

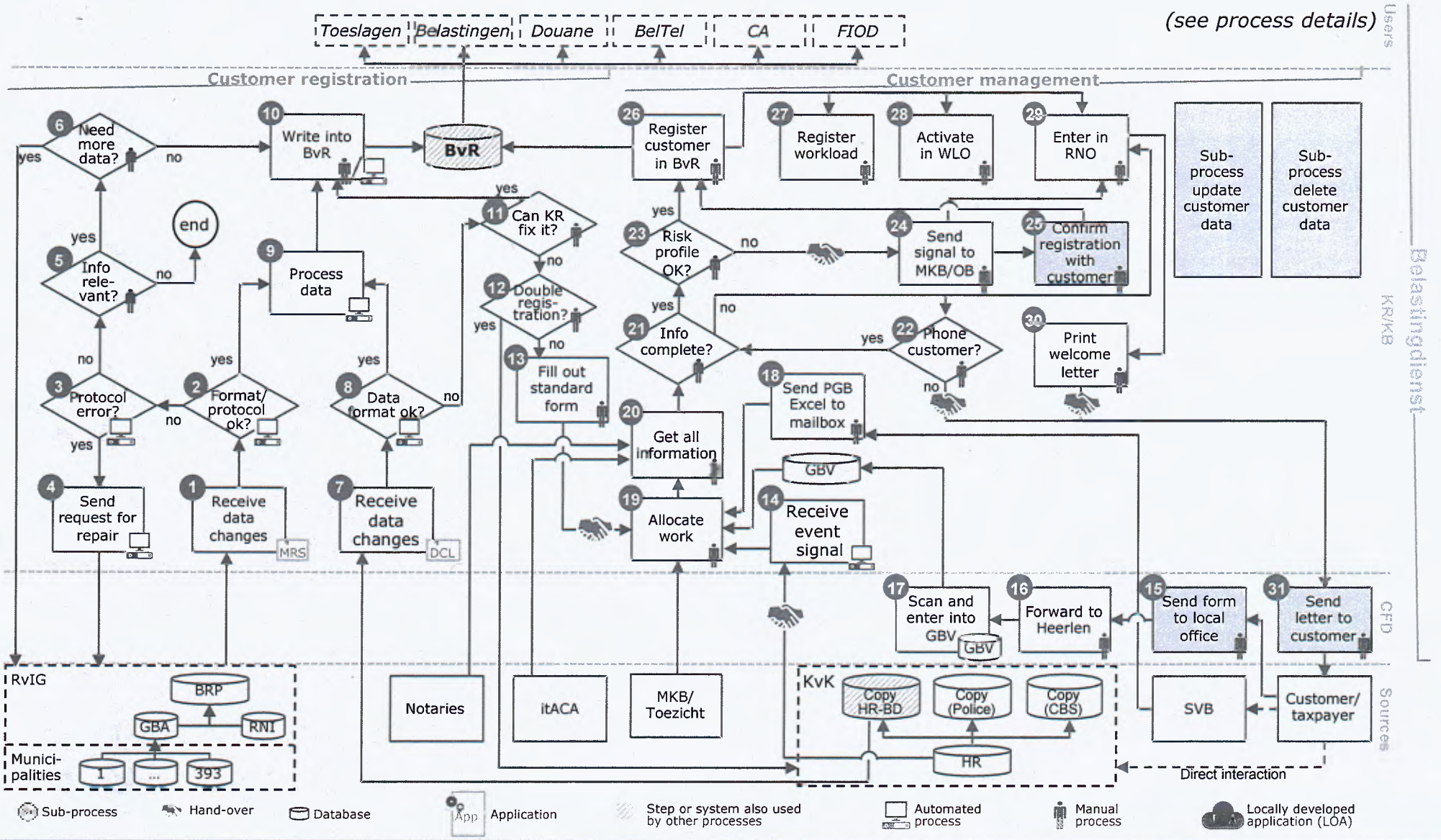
Process overview *(illustrative)*



General information

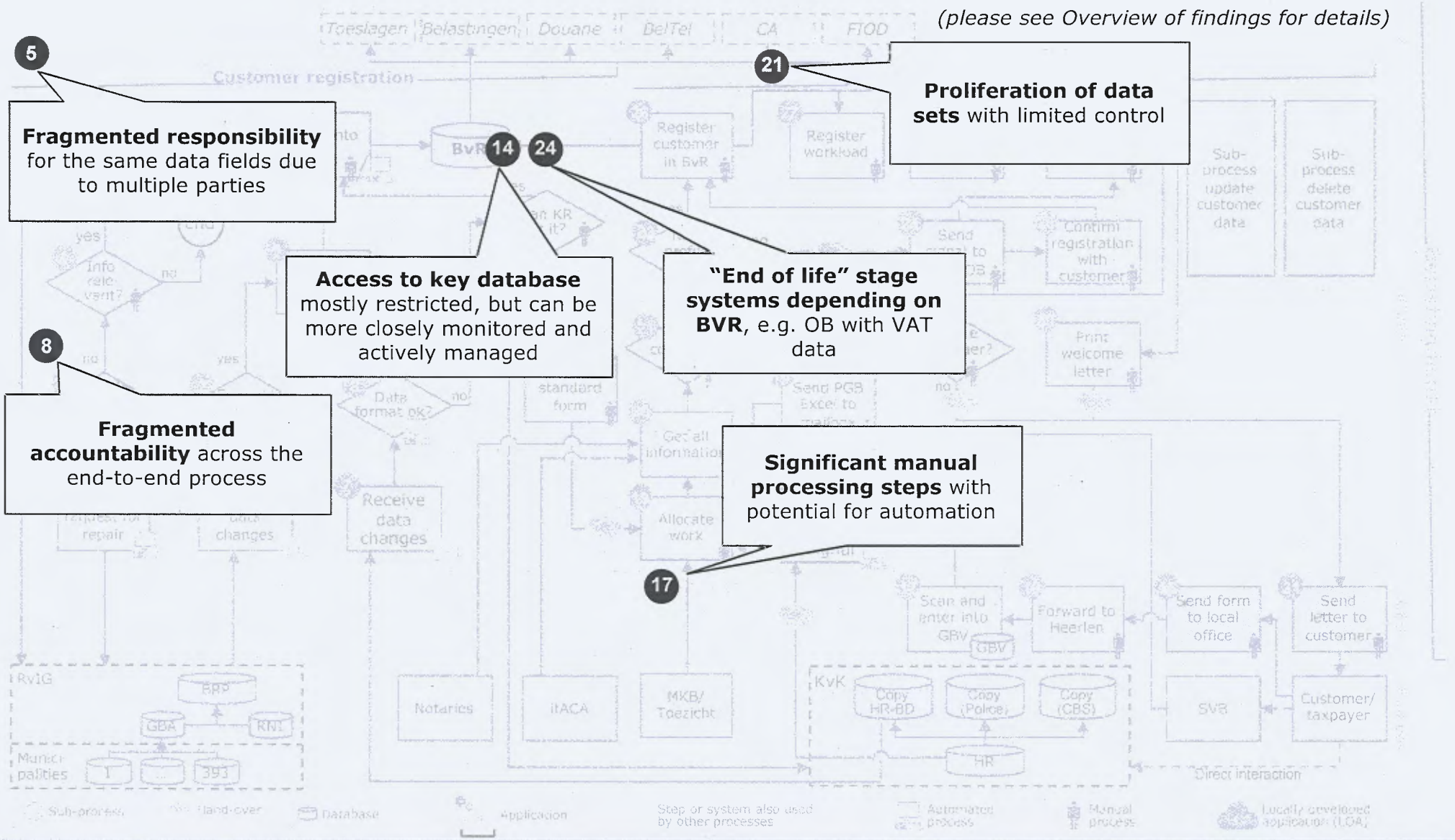
- Base customer data is collected from:
  - National identity institute (Rijksdienst voor Identiteitsgegevens, RvIG): for natural persons
  - Chamber of Commerce (Kamer van Koophandel, KvK): for non-natural persons / legal entities
  - Taxpayer
  - Notaries
  - Oversight (Toezicht Belastingen)
  - itACA: complimentary address information
- Data is collected:
  - Automatically through massive data processing (by Customer registration, ~12 FTE)
  - Semi-automatically through semi-massive data processing (by Ccustomer management, ~480 FTE)
- All customer data is centrally stored in the BVR (Beheer van Relaties) database
- Customer data is used by multiple internal processes within the organisation, e.g. by:
  - Benefits (Toeslagen)
  - Taxes (Belastingen)
  - Customs (Douane)
  - BelTel
  - Oversight (Toezicht)
  - Fiiscal Intelligence (FIOD)

4 Use case #2: base customer registration Process map

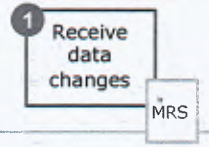


4 Use case #2: base customer registration Key observations *(non-exhaustive)*

(please see Overview of findings for details)

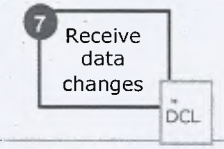
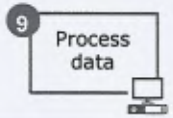
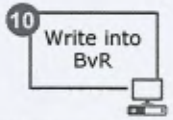
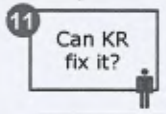
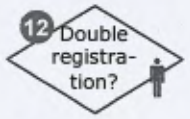
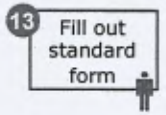


4 Use case #2: base customer registration Process details (1/5)

Step	Pictogram	Description	Responsible[1] *(role)*	Freq.	Automation
1		Data is automatically collected from BRP (Basis Registratie Personen) through MRS application (Message-Retriever and Submitter)	Customer registration	Daily	Automated
2		MRS automatically checks for following elements: • Unknown message type • Missing obligatory elements • Elements for which BD is not authorised • Format of data filled in (e.g. dates, strings, numbers)	Customer registration	Daily	Automated
3		If quality check fails, MRS assesses whether it was caused by a protocol error or by a content error	Customer registration	Ad hoc	Automated
4		In case of a protocol error, a GBA error message is sent along with a request for repair to the RvIG	Customer registration	Ad hoc	Automated
5		In case of a content error, data set is rejected as not processable and automatically sent to KR or KB. If the error message is not relevant, it is ignored (example: data that does not fit in BvR, e.g. family relations)	Customer registration/ management	Ad hoc	Manual
6		Check if more data is needed (example: end of a marriage, even though no marriage has been registered in BvR). If yes, hold and send request to source. If not, manually correct BvR entry	Customer registration/ management	Ad hoc	Manual

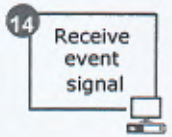
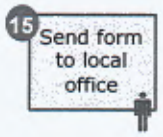
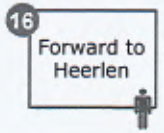
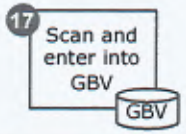
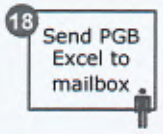
1Customer registration = Klantregistratie (KR); Customer management = Klantbeheer (KB)

4 Use case #2: base customer registration Process details (2/5)

Step	Pictogram	Description	Responsible[1] *(role)*	Freq.	Automation
7		Receive automatically data changes from the Belastingdienst copy of the HR database (HR-BD) in Chamber of Commerce through DCL application (DB2 crossloader)	Customer registration	Daily	Automated
8		Automated data quality check. In case of errors, send an attention signal	Customer registration	Daily	Automated
9		Process data by conversion/transformation (convert to capital letters, remove diacritics) in order to fit into BvR format	Customer registration	Daily	Automated
10		Write changes into BvR – full database copy initially loaded, changes updated regularly	Customer registration	Daily	Automated
11		In case of content errors as indicated by an attention signal, check whether KR can fix it. If yes, then update BvR	Customer registration	Ad hoc	Manual
12		If there is a double registration, send feedback to Chamber of Commerce (KvK)	Customer registration	Ad hoc	Manual
13		In case KR cannot fix the error, a standard form is filled out and sent to KB Mailbox	Customer registration	Ad hoc	Manual

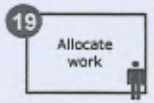
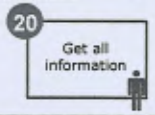
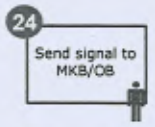
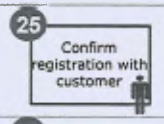
1Customer registration = Klantregistratie (KR); Customer management = Klantbeheer (KB)

4 Use case #2: base customer registration Process details (3/5)

Step	Pictogram	Description	Responsible[1] *(role)*	Freq.	Automation
14		Event signal (e.g. new company, move, etc.) is received from HR via ASK (Afhandelen Signalen Klantbeheer) along with the respective task (~500 tasks/day)	Customer management	Daily	Automated
15		Customer/taxpayer sends a form directly to the Belastingdienst's local office (for companies that do not register with KvK, e.g. foreign companies, request for fiscal units or requests for tax returns for solar panels)	CFD	Daily	Manual
16		Local office forwards the letter to Heerlen for further processing	CFD	Daily	Manual
17		In Heerlen, the letter is scanned and entered into GBV (Generieke Bezwaar Voorziening, a general PDF mail transportation system)	CFD	Daily	Manual
18		All customers with a PGB Personalised Health Care Budget have to register with the SVB Social Insurance Bank. SVB sends registration information (Excel list) to KB Mailbox. Appointed employees there pick it up directly from the mailbox, so it does not have to go through the work allocation process.	SVB	Daily	Manual

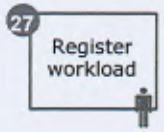
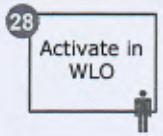
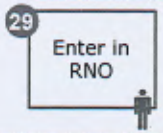
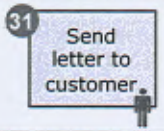
1Customer registration = Klantregistratie (KR); Customer management = Klantbeheer (KB)

4 Use case #2: base customer registration Process details (4/5)

Step	Pictogram	Description	Responsible[1] *(role)*	Freq.	Automation
19		Tasks come in both from GBV and ASK – they are sorted by type and allocated to employees	Customer management	Daily	Manual
20		An employee has to gather all information to complete the task using the system GGI (Gegevensregistratie Gemeenschappelijke Intake)	Customer management	Daily	Manual
21		Check if the information is complete by using data from notary, fiscal unit and itACA[2]	Customer management	Daily	Manual
22		If the information is not complete, contact customer to resolve (by phone/mail) and enter status in RNO system	Customer management	Daily	Manual
23		Perform pre-emptive data check based on a pre-defined risk framework (A-list) to prevent VAT carrousel fraud	Customer management	Daily	Manual
24		Send signal to MKB/OB[3] expert in Toezicht to perform a manual check and enter status in RNO. In addition, a monthly retro-active check is deployed to make sure that all registrations are closed by MKB/OB.	Customer management	Daily/ monthly	Manual
25		MKB/OB contacts customer to determine whether registration can be confirmed	MKB/OB	Daily	Manual
26		Customer is registered into BvR.	Customer management	Daily	Manual

1Customer registration = Klantregistratie (KR); Customer management = Klantbeheer (KB)
2 Commercial software by Human Inference that helps lookup address information
3 Small and medium enterprises/Value Added Tax

4 Use case #2: base customer registration Process details (5/5)

Step	Pictogram	Description	Responsible[1] *(role)*	Freq.	Automation
27		Employees have to register their work in a production measurement system by filling out both: • ALP once every week for all activities • Daily monitor (dagmonitor) for the registration activities only (system exists because the weekly system is not suitable for continuous steering)	Customer management	Daily/ weekly	Manual
28		After registration in BvR, customer is activated in WLO (Werk Loon Omzet) through filling-out a digital form to inform MiA/OB to register the company for VAT In addition, a check is performed if the regular MiA[2] process is too late, i.e. registered after the cut-off date. If so, a manual tax statement form (handmatig aangifteformulier) is processed retroactively (~100.000 cases/year)	Customer management	Daily	Manual
29		Enter status in RNO (tracking for four taxes[3]). If suspicions remain after MKB/OB check, the company is registered for all taxes, except for VAT (thus not in WLO)	Customer management	Daily	Manual
30		Once the registration is complete, a welcome letter (vaststellingsbrief) is printed	Customer management	Daily	Manual
31		Welcome letter is sent to the customer	CFD	Daily	Manual

1. Customer registration = Klantregistratie (KR); Customer management = Klantbeheer (KB)
2. MiA = types administration
3. OB = Omzetbelasting (VAT), LH = Loonheffing (salary tax), IH = Inkomstenheffing (income tax), VpB = Vennootschapsbelasting (corporate profit tax)

4 Use case #2: base customer registration Data sources (1/2)

Type	Source	Abbr.	Collected data	Freq.	Collection	Stored in
External suppliers	**Chamber of Commerce** Kamer van Koophandel	KvK	Trade register data of Dutch non-natural persons, e.g. • Location • Ownership • Rights • Financials	Daily	KR: DCL KB: ASI/ASK	**HR** Handelsregister
	National Institute for Identity Data Rijksdienst voor Identiteitsgegevens	RvIG	Customer data of NP for Dutch residents, e.g. • Name and date of birth • Address • Children, parents, partner • Death • Nationality and immigration status Customer data of NP for non-residents	Daily	Message Reviewer and Submitter (MRS)	**BRP** Basisregistratie Personen • **GBA** Gemeentelijke Basis Administratie • **RNI** Registratie Niet-Ingezetenen
	Human Inference		• Buildings and addresses	Ad hoc	itACA	Direct access
	Taxpayer		• Registration • Fiscal unit • Solar power	Ad hoc	Paper form	Forwarded to GBV
	Social Insurance Bank Sociale Verzekeringsbank	SVB	• Personalised Health Care Budget (Persoonsgebonden Budget, PGB)	Daily	Excel file	Sent to KB Mailbox
	Notary		• Share ownership details • Legal entities • Accounting year for VpB (corporate profit tax)	Ad hoc	Manual through IVG	Sent to IVAA

4 Use case #2: base customer registration Data sources (2/2)

Type	Source	Abbr.	Collected data	Freq.	Collection	Stored in
Internal sources	Supervision Taxes		• Non-registered non-natural persons found using internet robots, banks, cadastre, Benefits • Fiscal unit	Ad hoc	Form	Direct access

4 Use case #2: base customer registration Intermediate databases and applications (1/2)

Name	Database/ application	Description	Update frequency	Internal use by	External use by	Responsibility
BvR Beheer van Relaties	Database	Data of all NP and NNP[1]	Daily	289 systems, e.g. Toeslagen	-	CA
MRS Message-Retriever and Submitter	Application	Loads GBA data	Daily	Customer registration	-	CA
DCL DB2 crossloader	Application	Loads HR data	Daily	Customer registration	-	CA
ASI Actief Signaleren Informatie	Application	Allows for event notification subscriptions	Continuous	Customer registration	-	CA
ASK Afhandelen Signalen Klantbeheer	Application	Creates tasks out of the events, i.e. it is a workflow system	Continuous	Customer management	-	CA
GBV Generieke Bezwaar Voorziening	Database	General PDF mail transportation system	Daily	CFD	-	CA
GGI Gegevensregistratie Gemeenschappelijke Intake	Application	Data on registration of new enterprises	Daily	Customer management	-	CA
KB Mailbox	Application	Contains all the work that has to be done by Customer management	Continuous	Customer management	-	SMP

1 NP = natural person; NNP = non-natural person

4 Use case #2: base customer registration Intermediate databases and applications (2/2)

Name	Database/ application	Description	Update frequency	Internal use by	External use by	Responsibility
ALP n/a	Database	Data on work load of Customer management employees	Weekly	Customer management	-	SMP
Daily monitor Dagmonitor	Database	Data on work load of Customer management employees	Daily	Customer management	-	SMP
WLO Werk Loon Omzet	Application	Company to be registered for OB (VAT)	Daily	Customer management	-	CA
RNO Registratie Nieuwe Ondernemingen	Application	Registration of company to send welcome letter and monitor five-day term	Daily	Customer management	-	CA
IVAA Invoer en Verstrekken Akten en Aktengegevens	Database	Official documents from notaries	n/a	Customer management	-	n/a

4 Use case #2: base customer registration Relevant organisational units

Abbr.	Organisational unit (Dutch)	Organisational unit (English)	Core responsibilities
CA	Centrale Administratie	Central Administration	Manage data streams within the organisation
CFD	Centrum voor Facilitaire Dienstverlening	Centre for Facility Services	Provide facility support for the organisation
GO	Grote Ondernemingen	Large Corporates	Manage taxes for large corporates
KB	Klantbeheer	Customer management	Enrich customer registration data manually
KR	Klantregistratie	Customer registration	Process automated customer registration
LIC	Landelijk Incassocentrum	SMP Collection Centre	Collect delayed tax payments for individuals and small enterprises
MiA	Middelenadministratie	Types Administration	Send the tax determination decisions to the enterprise for four tax types: OB/LH/IH/VpB[1]
MKB	Midden- en Kleinbedrijf	Small and Medium Enterprises	Manage taxes for small and medium enterprises
PDB	Particulieren, dienstverlening en bezwaar	Individuals, service and complaints	Manage taxes for individuals, service and complaints
SMP	Semi-massale Processen	Semi Massive Processes	Semi-automated customer registration processing

1. OB = Omzetbelasting (VAT), LH = Loonheffing (salary tax), IH = Inkomstenheffing (income tax), VpB = Vennootschapsbelasting (corporate profit tax)

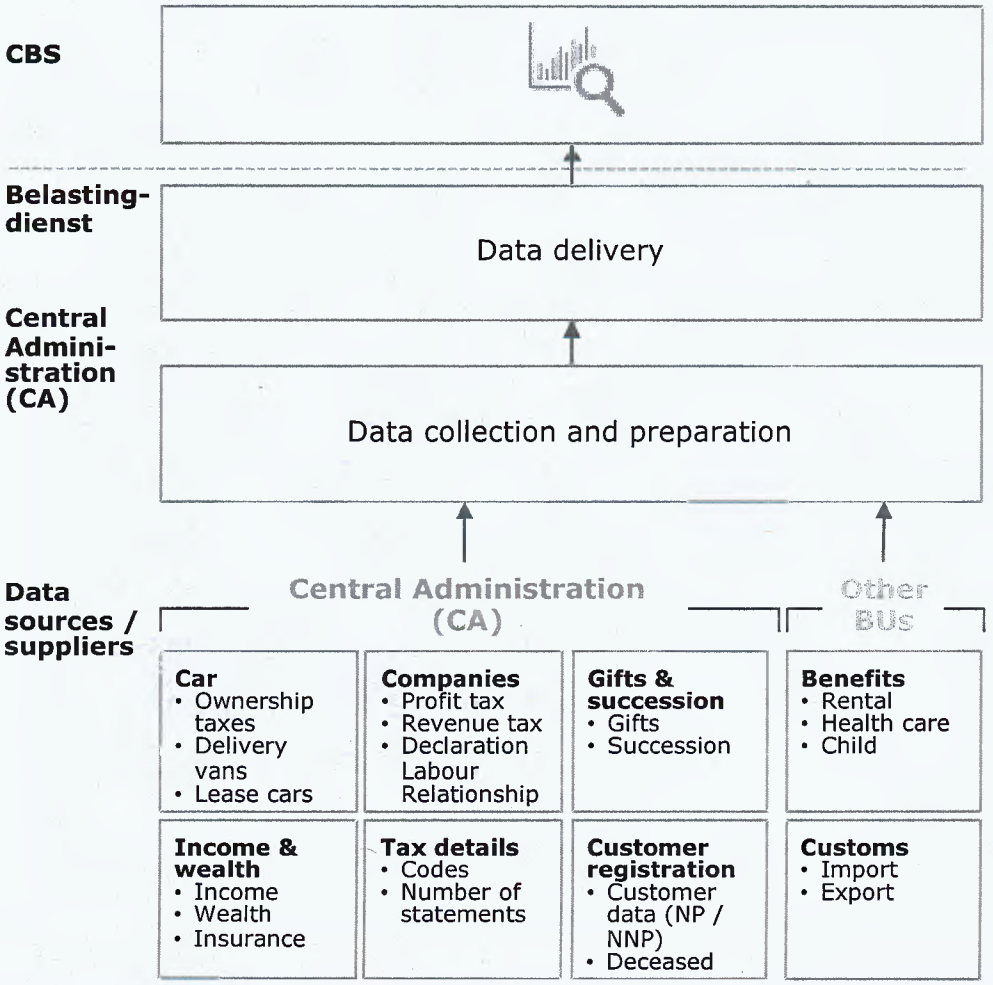
4 Use case #2: base customer registration Key process metrics

Metric	Base customer registration process	Implication
# Sources	A total of **7 source types** deployed • 1 internal source • 6 external supplier types (including 1 non-government source)	**Variety of sources** deployed with different types of data (storage)
# Process steps	A total of **31 process steps** were identified within the customer registration process of which: • 9 automated • 22 manual	**Many manual process steps** (~75%), mostly within customer management
# Hand-overs	A total of **5 hand-overs** were identified between different parts of the organisation	Several **hand-overs** of responsibility, mainly between customer registration and customer management
# Control steps	A total of **4 control steps** are performed throughout the process (2 done manually)	Some control steps are automated, but **processing is done manually**
# Intermediary systems and applications	A total of **13 intermediate databases/ applications** are deployed throughout the process: • 5 databases • 8 applications	Deployment of **many intermediate systems**

Table of content

4 Use case #3: Data provided to CBS General information

Process overview *(illustrative)*



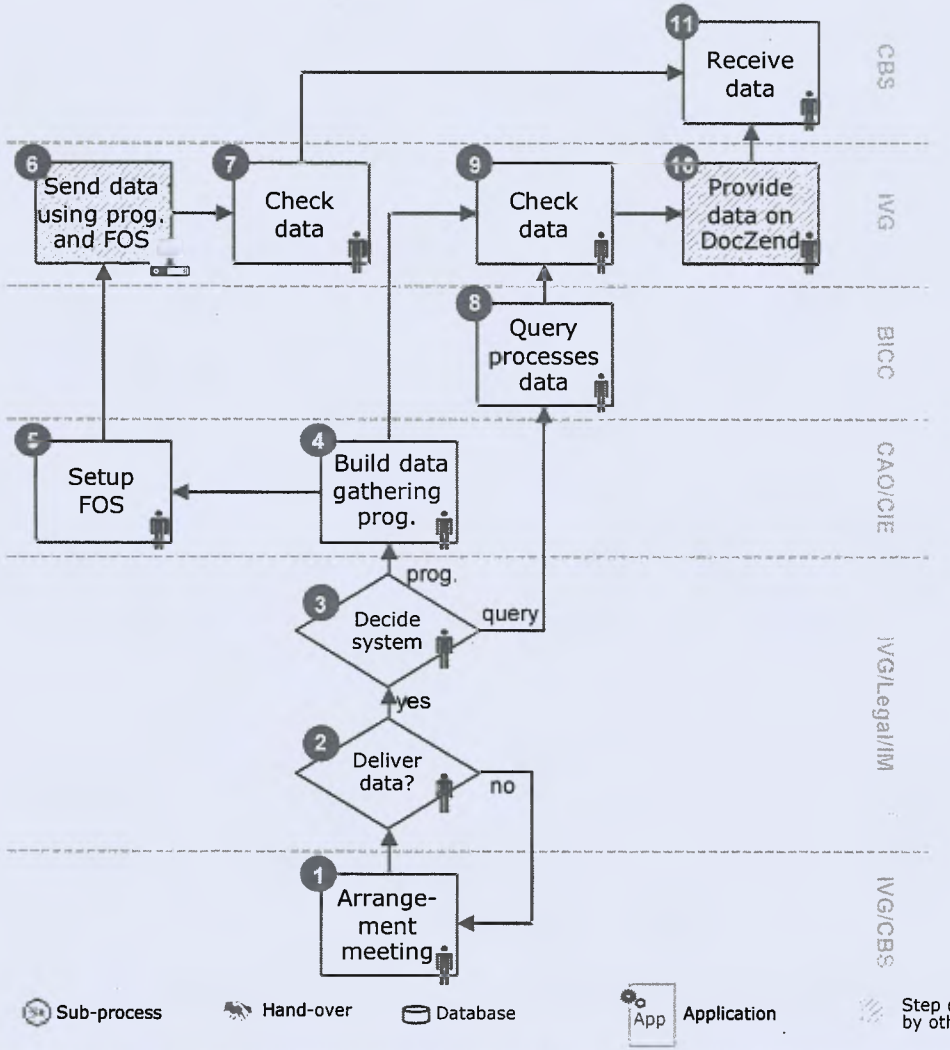
General information

- The CBS (Central Bureau of Statistics) is responsible for publishing the official national statistics for the Netherlands
- As opposed to other third parties, CBS is entitled by law to receive any information as long as it is used for statistical purposes. It thus collects data from a variety of sources, Belastingdienst being one of its major data suppliers (e.g. on income, wealth, taxes, benefits, house and car ownership, etc.)
- Data provided to CBS by Belastingdienst is collected and bundled by Central Administration (2 account managers responsible in Central Administration)
- A total of ~40 FTE in 10 teams within CA are working on the data collection and delivery
- Data is provided regularly with some ad hoc requests (e.g. urgent requests by parliament)
- ~33 data types provided to CBS (see source list for details), only 3 data types delivered automatically (rest delivered manually via DocZend)

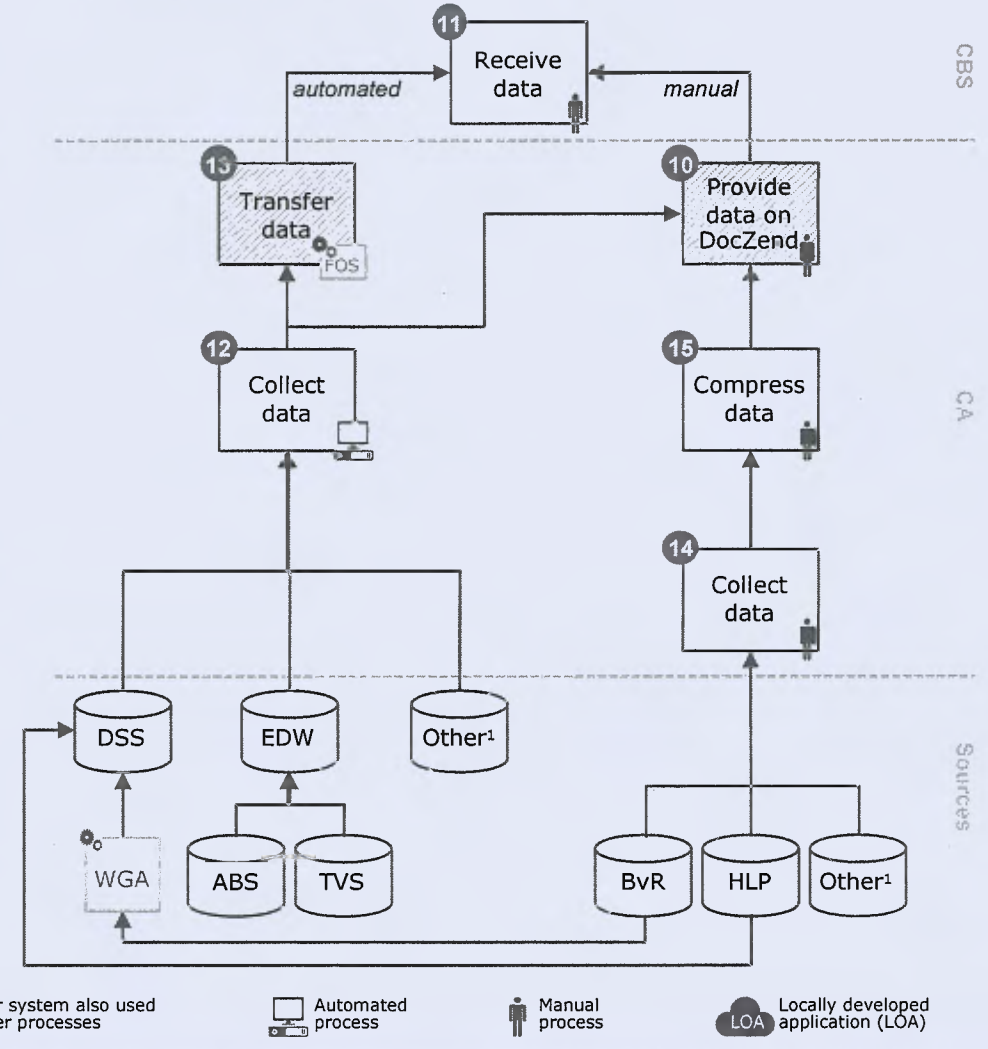
4 Use case #3: Data provided to CBS Process maps

(see process details)

New data delivery set-up



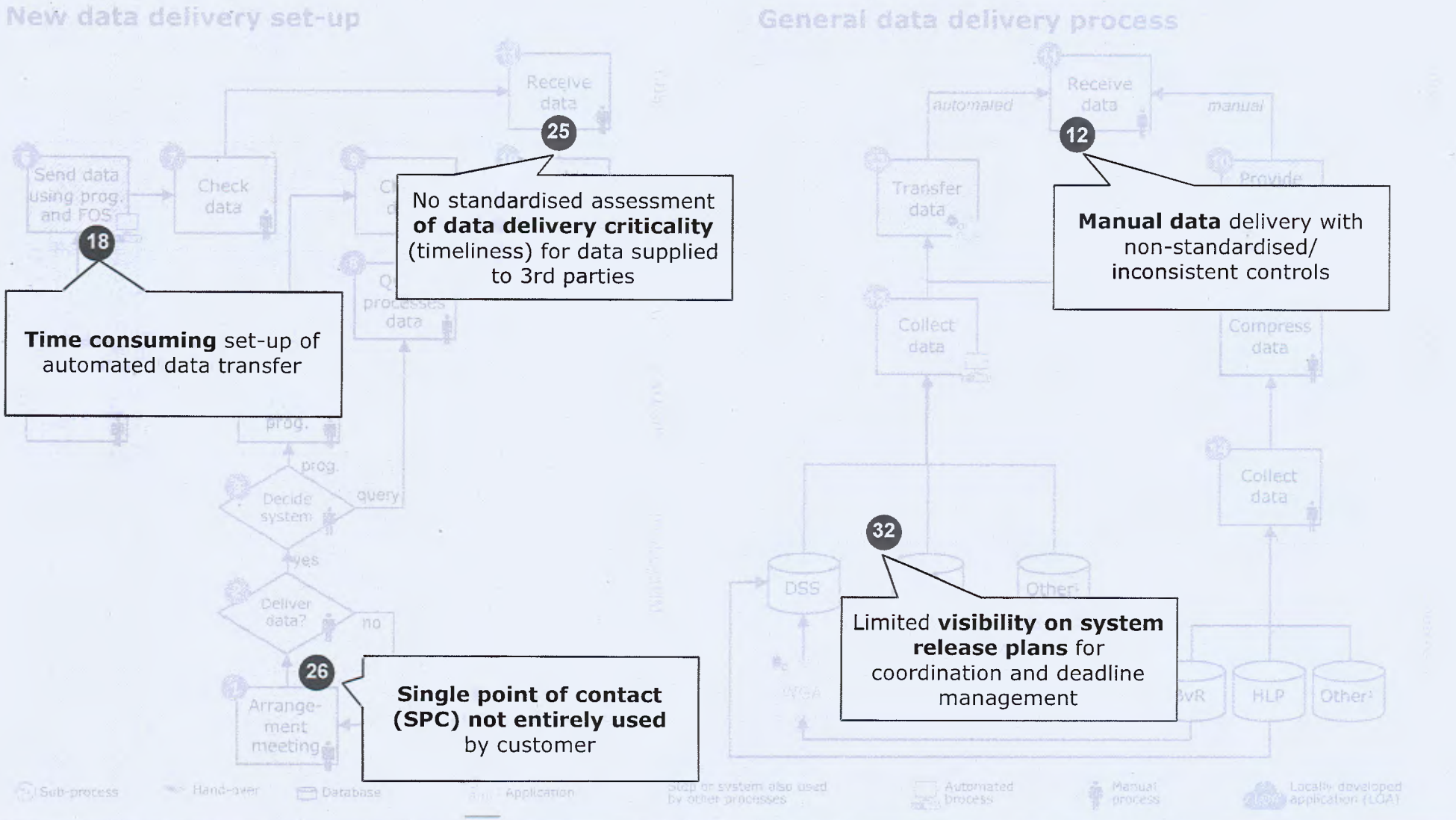
General data delivery process



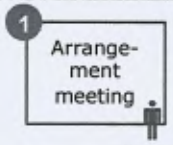
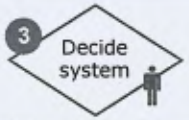
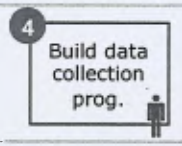
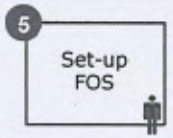
1 See source list

4 Use case #3: Data provided to CBS Key observations *(non-exhaustive)*

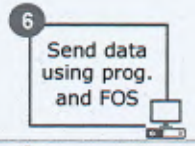
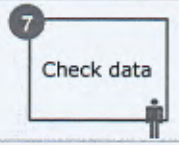
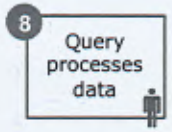
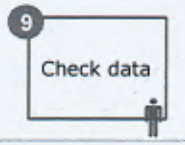
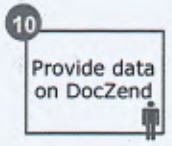
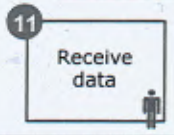
(please see Overview of findings for details)



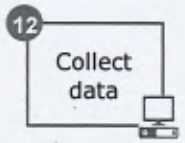
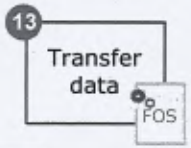
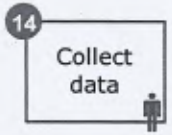
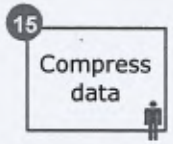
4 Use case #3: Data provided to CBS Process details (1/3)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
1		During the arrangement meeting (inrichtingsoverleg) new developments, legislation and impact on the data are discussed. Both CBS and CA can suggest new data streams and agree on (critical) deadlines	CBS/CA (account managers)	Quarterly	Manual
2		Discussion whether to deliver the requested data, based on: • Law • Purpose and goals • Privacy Joint decision taking by CA/Legal/IM (feasibility/legislation/proportionality)	CA/Legal/IM	Ad hoc	Manual
3		Decision on system to be used: query or automated program. If latter, immediately decide on whether to use FOS (see below)	CA/Legal/IM	Ad hoc	Manual
4		Build a program to collect and process necessary data. Programs are used for regular data deliveries as development takes ~9–12 months	CAO/CIE	Ad hoc	Manual
5		Set-up FOS connection (point-to-point) for automated data transfer. Needs ~9 months to setup and offers limited flexibility, therefore used for transfer of data on realtime/daily basis only	CAO/CIE	Ad hoc	Manual

4 Use case #3: Data provided to CBS Process details (2/3)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
6		Send data using program and FOS	CA (process expert)	Per source list	Automated
7		Check data after delivery by comparing delivered data to source data	CA (process expert)	Per source list	Manual
8		Write and use a query to process the data directly from the source. Queries (~6 weeks overall processing time) are used when • The delivery is infrequent (e.g. once a year) • There is not enough building capacity at CAO • The data is needed on short notice (<9months)	BICC	Per source list	Manual
9		Check data before sending it using DocZend (both on content and format) by comparing delivered data to source data	CA (process expert)	Per source list	Manual
10		Provide data on DocZend: an ad hoc service offered by KPN (major Dutch telco company). Data is zipped/compressed and password protected and then sent to Gemnet (Gemeentenet). Recipient receives a link to download the file and after confirmation is sent the zip password	CA (process expert)	Per source list	Manual
11		Receive data	CBS	Ad hoc	Manual/automated

4 Use case #3: Data provided to CBS Process details (3/3)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
12		Collect data either through DSS (for HLP and WGA) or EDW (for ABS and TVS), or directly from the source databases	CA (process expert)	Per source list	Automated
13		Transfer automatically gathered data using FOS	CA (process expert)	Per source list	Automated
14		Collect data using a query	CA (process expert)	Per source list	Manual
15		Compress data into a password protected zip file	CA (process expert)	Per source list	Manual

4 Use case #3: Data provided to CBS
Overview of data delivered to the CBS (1/5)

Type	Source	Abbr.	Collected data	Frequency	Collection[1]	Data period	Method
Customer registration	Relationship management Beheer van Relaties	BvR directly	Customer registration NP	Annually	Manual	Year T-1	Query
		BvR via WGA	Customer registration NNP	Monthly	Manual	Year T	Program
		BvR directly	Data on deceased persons	Annually	Manual	Year T-1	Query
Income & wealth	Fiscal Wage Data Fiscale Loon Gegevens	FLG	Income	Three times p.a.	Manual	Year T-1 and T-2	Program
	Registration Bank Data Registratie Bankgegevens	RBG	Payment, savings, securities and loans	Two times p.a.	Manual	Year T-1	Program
	Intelligence information system Renseignementen Informatiesysteem	RIS	Life insurance and annuities	Annually	Manual	Year T-1	Query
			WOZ house price for tax purposes	Annually	Manual	Year T	Query
	Heffen Loonbelasting en Premies Levy Income tax and Premiums	HLP via DSS	Income tax (Walvis Loonheffing)	Weekly	Automated[2]	*n/a*	Program

1 Manual data transfer is done using DocZend, automated transfer uses FOS
2 Critical data delivery

4 Use case #3: Data provided to CBS Overview of data delivered to the CBS (2/5)

Type	Source	Abbr.	Collected data	Frequency	Collection[1]	Data period	Method
Companies	Declaration Labour Relationship Verklaring Arbeidsrelatie	VAR	• Proof that ZZP (entrepreneur without personal) is not actually an employee, but truly independent.	Quarterly	Manual	Year T	Query
	Vennootschaps-belasting Company tax	VPB	• Company profit tax	Two times p.a.	Manual	Year T	Program
	Decision tax system Aanslag Belasting Systeem	ABS via EDW	• Tax decisions for: • IH income tax • VPB company profit tax	Weekly	Automated	*n/a*	Program
	Omzetbelasting	OB	• OB VAT tax	Daily	Automated[2]	*n/a*	Program
	Intracommunautaire transacties	ICT	• ICP Intracommunautaire Prestaties VAT tax				
	Heffen Loonbelasting en Premies Levy Income tax and Premiums	HLP directly	• Missing tax statements	Monthly	Manual	*n/a*	Query
	MOSS (Mini One Stop Shop)	MOSS	• Companies with a Dutch presence for which the revenue is taxed abroad	Quarterly	Manual	*n/a*	Query
Gift and succession	Automated Registration and Succession System Geautomatiseerd Registratie- en Successiesysteem	GRS	• Gift and succession	Two times p.a.	Manual	Year T	Query

1 Manual data transfer is done using DocZend, automated transfer uses FOS
2 Critical data delivery

4 Use case #3: Data provided to CBS
Overview of data delivered to the CBS (3/5)

Type	Source	Abbr.	Collected data	Frequency	Collection[1]	Data period	Method
Car	Union of Dutch lease car companies Vereniging van Nederlandse Autoleasemaatschappijen	VNA	• Lease car data	Two times p.a.	Manual	Year T and T-1	Query
	Motorvehicles tax under Architecture Motorrijtuigenbelasting onder Architectuur	MOA	• Truck data	Five times p.a.	Manual	*n/a*	
	Ownership tax Houderschapsbelasting	HSB	• Car tax data	Five times p.a.	Manual	*n/a*	
	Ownership tax Houderschapsbelasting	HSB	• Delivery van data	Five times p.a.	Manual	*n/a*	
	Ownership tax Houderschapsbelasting	HSB	• Tax structure calculation information	Quarterly	Manual	*n/a*	
Tax details	Statistical Management Information Statistiek Bestuurlijke Informatie	SBI	• Tax statement (biljet) codes	Annually	Manual	Year T-2	

	Fiscal Agreement Administration
	Fiscale Afspraken Administratie
		FAA	• Number of tax return statements that have to be submitted for:
			  • IB income tax
			  • VPB company profit tax
				Quarterly	Manual	From 2010	

1 Manual data transfer is done using DocZend, automated transfer uses FOS

4 Use case #3: Data provided to CBS
Overview of data delivered to the CBS (4/5)

Type	Source	Abbr.	Collected data	Frequency	Collection[1]	Data period	Method
Benefits	Toeslagen Verstrekking Systeem Benefit Delivery System	TVS via EDW	WKO Law Child care Wet Kinderopvang	Three times p.a.	Manual	Till 2011	Query
			KIT Child benefits Kindertoeslag	Three times p.a.	Manual	Till 2011	
			Rental benefits and health care benefits	Three times p.a.	Manual	Till 2011	
			KOT Child care benefits Kinderovangtoeslag	Three times p.a.	Manual	From 2012	
			KGB Additional child benefits Kindgebonden budget	Three times p.a.	Manual	From 2012	
			Health care benefits	Three times p.a.	Manual	From 2012	
			Rental benefits	Three times p.a.	Manual	From 2012	
	Tegemoetkoming Bijzondere Uitgaven Compensation Special Expenses	TBU	TSZ Compensation Specific Health Care Costs Tegemoetkoming Specifieke Zorgkosten	Annually	Manual	Year T-3	

1 Manual data transfer is done using DocZend, automated transfer uses FOS

4 Use case #3: Data provided to CBS
Overview of data delivered to the CBS (5/5)

Type	Source	Abbr.	Collected data	Frequency	Collection[1]	Data period	Method
Customs	Customer Information System Klanten Informatie Systeem	KIS	BvR like system	ad hoc	Manual/ automated[2]	n/a	Query/ Program[2]
	Manifest	-	Transport to/from outside the EU	ad hoc	Manual/ automated[2]	n/a	
	Statement System Aangiftesysteem	AGS	Imported goods	ad hoc	Manual/ automated[2]	n/a	

1 Manual data transfer is done using DocZend, automated transfer uses FOS
2 Both channels are used: shipping uses a query and therefore DocZend, all other queries go through a program and FOS

4 Use case #3: Data provided to CBS Intermediary databases and applications deployed

Name	Database/ application	Description	Update freq.	Internal use by	External use by	Responsibility
DocZend DocSend	Application	All data that is sent automatically (see source list)	Per source list	CA	CBS	CA
DSS Decision Support System	Application/ database	Processes: • HLP income tax • WGA company data	Per source list	Programs	None	CA
EDW Enterprise Data Warehouse	Application/ database	Processes: • ABS tax decisions • TVS benefits	Per source list	Programs	None	CA
FOS File Oriented Service	Application	Takes data directly from program and sends it to CBS (point-to-point FTP-based system using certificates)	Per source list	CA	CBS	CA
WGA Werkgevers-administratie	Application	Sends BvR company data to DSS	Per source list	DSS	None	CA

4 Use case #3: Data provided to CBS Relevant organisational units

Abbr.	Organisational unit (Dutch)	Organisational unit (English)	Core responsibilities
BICC		Business Intelligence Competence Centre	Write the queries
CA	Centrale Administratie	Central Administration	Manage data streams within the organisation
CAO	Centrum voor Applicatieontwikkeling en Onderhoud	Centre for Application Design and Maintenance	Design and maintain applications, i.e. write programs
CBS (external)	Centraal Bureau voor de Statistiek	Central Bureau of Statistics	Publish the official national statistics.
CIE	Centrum voor Infrastructuur en Exploitatie	Centre for Infrastructure and Exploitation	Maintain infrastructure
IM	Informatie Management	Information Management	Plan and support internal data streams
IVG	Inwinnen en Verstrekken van Gegevens	Receive and Deliver Data	Collecting data from third parties and delivering data to third parties
Legal	n/a	n/a	Check whether the data can be delivered to external parties

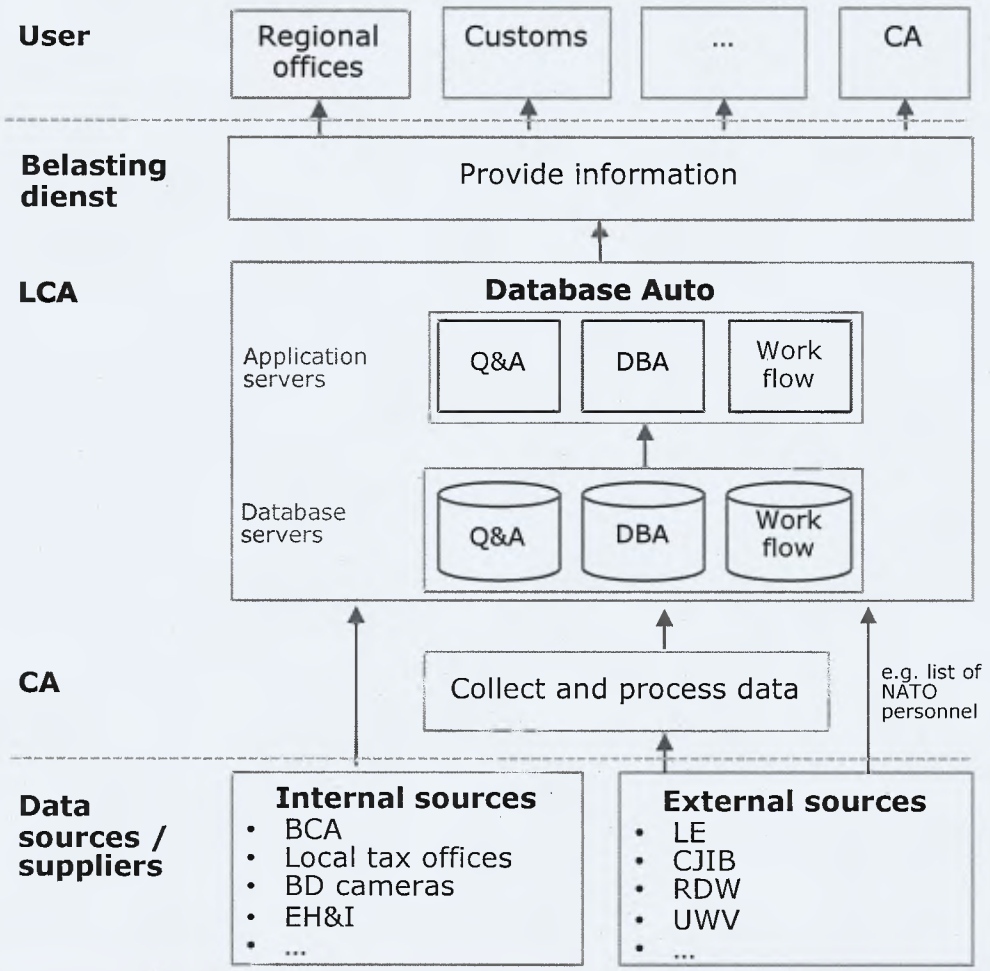
4 Use case #3: Data provided to CBS Key process metrics

Metric	Data provided to CBS	Implication
# Sources	A total of **33 data source types** deployed, all internal	**Wide range of data types** provided to CBS
# Process steps	**15 process steps** were identified within the general data delivery process : • 3 automated for the program and FOS stream • 12 manual for the query and DocZend stream	Process steps **mostly manual**
# Hand-overs	**No hand-overs** identified	-
# Control steps	**Two control steps** are performed throughout the process	Using queries and programs does **not require substantial manual checking** of data
# Intermediary systems and applications	A total of **5 intermediate databases/ applications** are deployed throughout the process: • 2 databases • 3 applications	Envisioned **consolidation** of systems/applications in future

Table of content

4 Use case #4: database auto General information (1/2)

Process overview *(illustrative)*



General information

- The database auto was established in 2006 as a locally developed application (LOA) consisting of 6 databases in total
- ~22 different data sources used to provide vehicle information to the database auto
- Currently ~1.800 authorised users (~78% of which regional tax offices)
- Among all authorised users, ~50% have not accessed the database in the last 2 months and ~25% have not accessed it in the past year
- Data from the database auto mainly used for monitoring of four tax laws:

	Tax law monitored	Business unit
1	Private use of company/ lease car (PGA)	LCA, Toezicht
2	Ownership tax on cars (MRB)	BCA
3	Taxation of heavy vehicles (BZM)	
4	Registration tax on new/imported vehicles (BPM)	SMP, Customs

4 Use case #4: database auto General information (2/2)

Database use

- Primary use on monitoring compliance of private use of company and lease cars (PGA): local tax offices can request reports on the company cars
- Additional use of reports: SMP and Customs can access reports to assist monitoring the purchase tax of vehicles (BPM) or any inquiries on cars; management dashboard with anonymised information, e.g. on volume of administered fines
- Additional use of images: monthly batch of images to CA to check compliance of vehicle tax (MRB) and heavy vehicle tax (BZM) laws and assist in handling objections

Database access & authorisation

- Database authorisation granted only after approval by team manager
- Currently 1.876 authorised users (per Oct 2015): ~50% have not accessed the database within the past 2 months, ~25% within the past year
- Split of database authorisations: ~78% local tax offices, 12% LCA, 4%CA, 6% other (LKB, Customs, AxiTaxi, EH&I, FIOD)

Database reports

- Reports are created on-demand and can be requested based on license plate, chassis number, etc. and contain basic information on one or more vehicles (incl. sub-report information, if relevant)
- Sub-reports can include fines, camera images and other information on the vehicle
- In 2015 a total of ~760.000 reports (~35 report types) and sub-reports (228 report types) have been delivered. A third of the reports has been delivered to a single user for a specific investigation into chassis number fraud

Automated number plate recognition

- ANPR data (license plate images with associated metadata such as location and time stamps) is key to monitor car use in the Netherlands
- Belastingdienst collects ANPR data from 4 Belastingdienst cameras (mounted on cars) and 43 police cameras (mounted on highways at 6 different locations)
- Belastingdienst and police cameras are two of the 22 sources for database auto

4 Use case #4: database auto
Database auto architecture

Database auto consists of 3 application servers and 3 database servers. The application servers are used to access the database servers, which are managed and maintained by CIE. The servers can be grouped into 3 pairs of application and database servers.

Query and analysis servers

- The query and analysis database server holds all the imported data
- Two LCA employees responsible for the data management (import, data processing) on the database server and access through the application server

DBA servers

- Subsets of the data from the query and analysis server (records of current cases / in progress status) are copied to the DBA database, where it is accessed by authorised parties
- 1.876 authorised users (per Oct 2015), authorisation granted and revoked by team leaders
- Access is logged, however high percentage of latent users (users who have not accessed the database for half a year / year)

Workflow servers

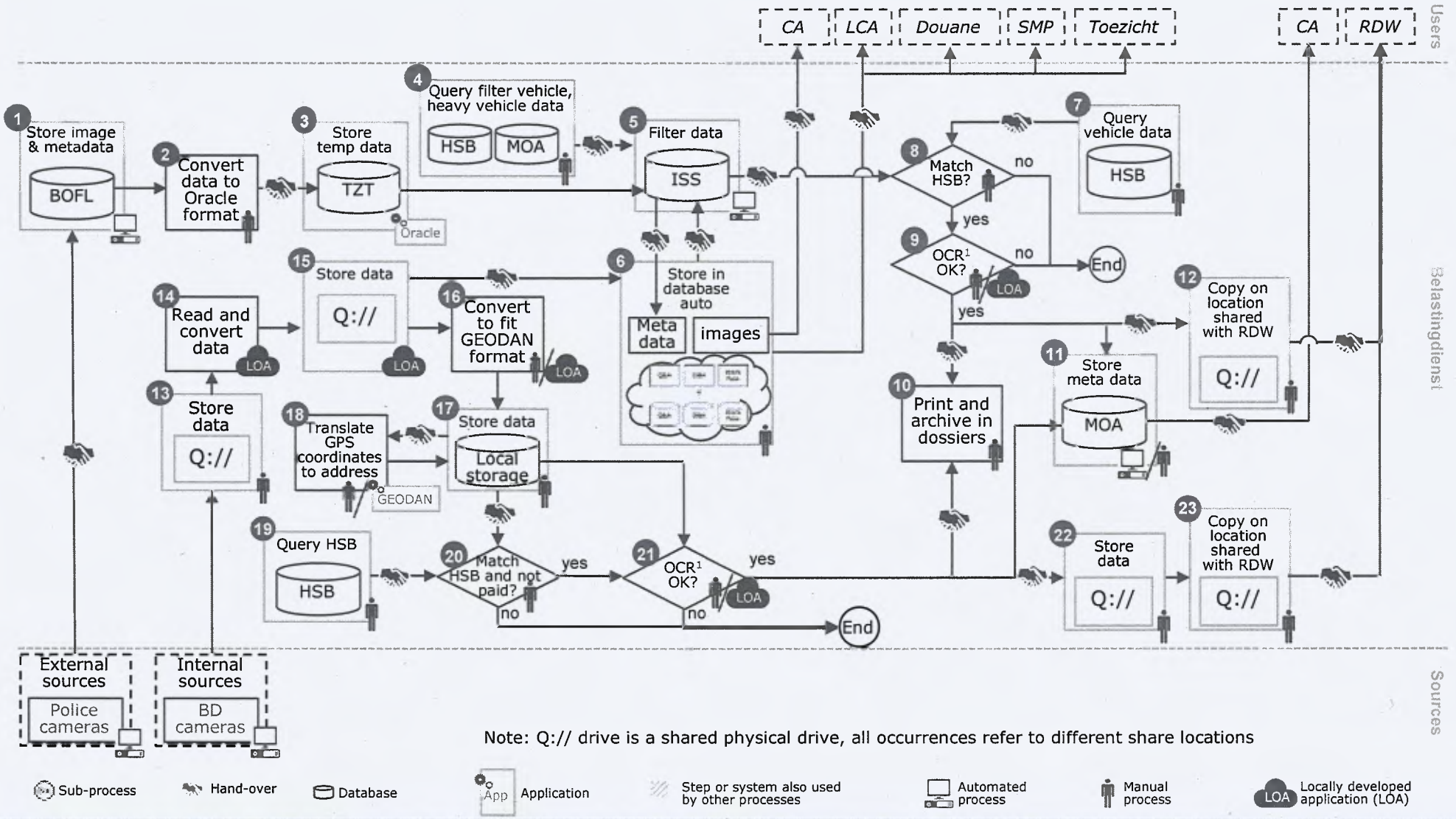
- Additional workflow servers register data manipulations / actions in the workflow systems

4 Use case #4: database auto Current changes

Area of change	Previous		Current
Ownership	Database auto fully owned by LCA	>	• CA has shown interest in taking responsibility for the database auto in October 2015
Database access	Data from all sources made accessible to numerous users	>	• User authorisation has been restricted, e.g. the objections team in CA can no longer directly access contra information (license plate images). Instead they are provided with relevant images as data dumps • LCA has taken decisions on data relevance. Data deemed no longer relevant for the database is still collected but no longer placed in the production database. For example, contra information for cases that are not currently in progress are excluded
Historical data	Database Auto held historic data form 2006 on (~9 yrs)	>	• Big part of the historical data has been deleted: the database now only holds data from January of the previous year until the present
Data deliveries	Data deliveries were not thoroughly reviewed	>	• Review of data deliveries initiated • The PIA (privacy impact assessment) used as basis for these reviews
Approach to non-compliance	'Detective' approach – focus on trying to identify and fine non-compliant tax drivers	>	• Moved towards a 'preventative' approach, providing the taxpayer with guidance through the declaration process to avoid non-compliance • Compliance scan found over 90% compliance, majority of non-compliance due to errors, only small amount of intentional non-compliance
License plate data collected	Currently car license plate data is gathered by 4 BD cameras and 43 police cameras	>	• Further considerations to incorporate additional data on: • ~800 police cameras • ILT truck-weighing cameras on highways (already collected, but parameters to be change to also capture cars) • Marechaussee cameras on boarders

4 Use case #4: database auto
Process map – automated number plate recognition (ANPR)

(see process details)



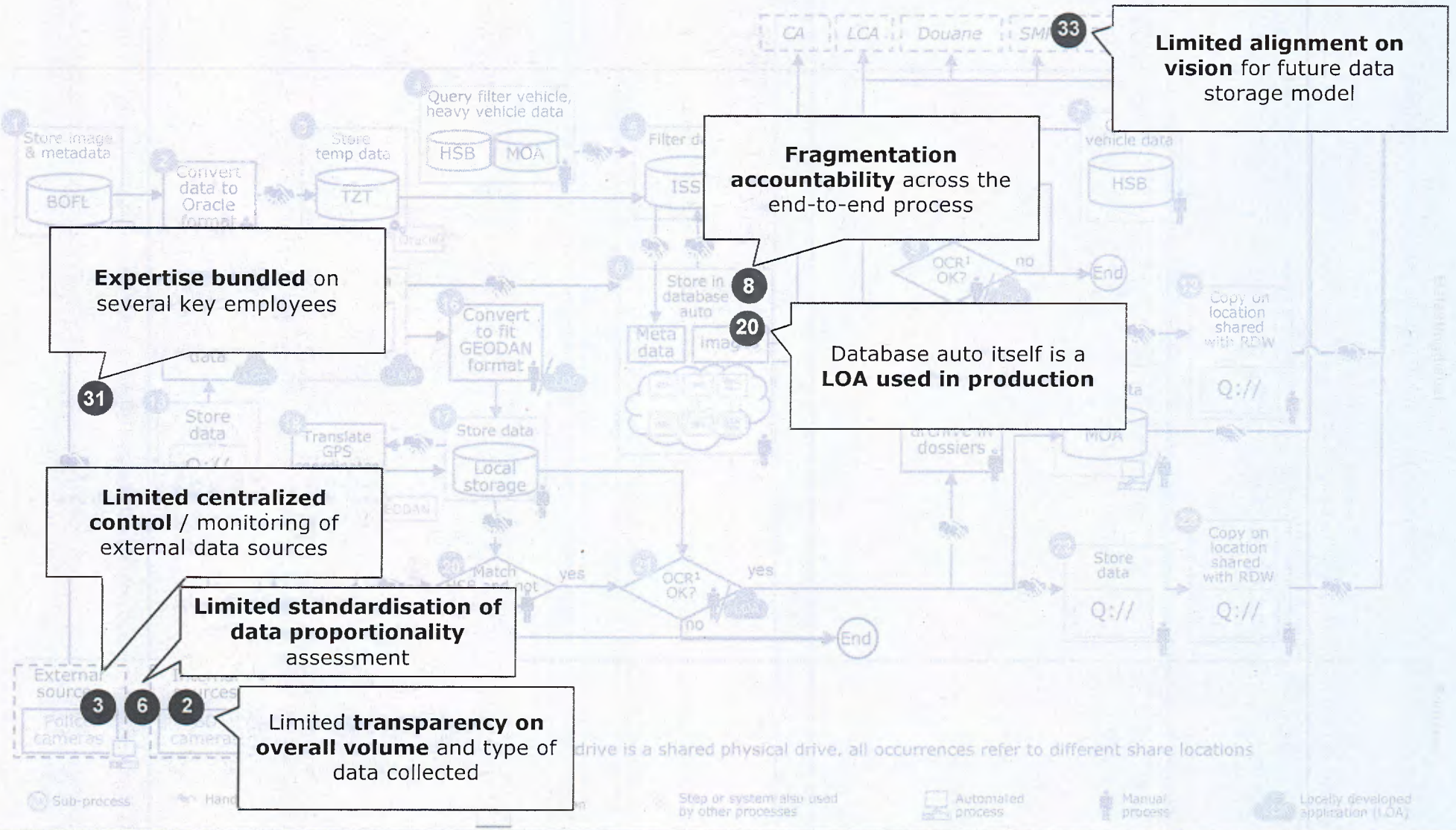
Note: Q:// drive is a shared physical drive, all occurrences refer to different share locations

Sub-process · Hand-over · Database · App Application · Step or system also used by other processes · Automated process · Manual process · LOA Locally developed application (LOA)

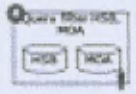
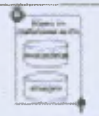
1 OCR - Optical character recognition

4 Use case #4: database auto Key observations *(non-exhaustive)*

(please see Overview of findings for details)



4 Use case #4: database auto ANPR process steps (1/3)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
1		Data from the police cameras is automatically transferred to the BOFL database	O&M (CA)	Realtime	Automated
2		Data is converted to fit the Oracle format	CA	Realtime	Manual
3		Data is temporarily stored on an Oracle sever (TZT, storage for 1 day)	CA (performed by Toezicht)	Daily	Automated
4		Vehicle and heavy vehicle data used to filter relevant license plates, e.g. suspended cars, inventory cars, heavy vehicles	IVG	Monthly	Manual
5		Data is filtered for fiscal relevance based on vehicle and heavy vehicle data and stored into the ISS system. Filter on: BPM, non-privately used cars, suspended cars, buses, heavy vehicles, taxis, company inventory	CA (performed by Toezicht)	Daily	Automated
6		Metadata from ISS is stored in database Auto, from the BD cameras both metadata and images are stored as well	IVG	Monthly	Manual
7		Query vehicle data (HSB) for relevant data to be used in the filtering of the data (suspended cars, inventory cars)	IVG	Monthly	Manual
8		Compare to data resulting from HSB query	LCA	Monthly	Manual
9		Assess quality of images – do they fit with the data (i.e. have the license plates been read correctly). Ø 30-40%[1] are rejected (poor quality)	LCA	Monthly	Manual

1 Source - Expert estimate CA

4 Use case #4: database auto ANPR process steps (2/3)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
10		Quality assured records are printed and archived	BCA auto	Monthly	Manual
11		Metadata from quality assured records is stored on the MOA system	LCA	Monthly	Semi-automated
12		Records that pass the QA step are stored in a shared directory on the Q-drive where they can be accessed by RDW[1]	IVG	Monthly	Manual
13		Data is stored onto the Belastingdienst Q-drive - it is transferred monthly in batches of 80.000 on USB keys. Each record contains 2 images with additional data such as GPS location, date & time	Regional offices *Car driver*	Monthly	Manual
14		2 types of cameras produce different date types, a LOA exists to recognize the format and convert if necessary	**IVG**	Monthly	Semi-automated
15		Converted data is stored on a partition of the Q: drive	**IVG**	Monthly	Semi-automated
16		Data from the Q-drive is converted into the desired GEODAN format	IVG (responsible) LCA (execution)	Monthly	Manual
17		Converted data is stored local on a directory accessible to the GEODAN application	IVG (responsible) LCA (execution)	Monthly	Manual
18		GEODAN software[2] is used to convert GPS data to address data	**LCA**	Monthly	Semi-automated

1: RDW – Rijksdienst voor Wegverkeer
2: The BD has a single license and the software runs on one laptop

4 Use case #4: database auto ANPR process steps (3/3)

Step	Pictogram	Description	Responsible *(role)*	Freq.	Automation
19		Query HSB for relevant data to be used in the filtering of the data (suspended cars, inventory cars)	**IVG**	Monthly	Manual
20		Check if the records are fiscally relevant and if the taxes are paid (by comparing to data queried from HSB)	LCA	Monthly	Manual
21		**Perform quality check on the data:** check if **the license** plate was identified correctly by OCR. By CA expert estimate **about 30-40% are** rejected	**LCA**	Monthly	Manual
22		Put data that passed the quality check on Q: drive	IVG	Monthly	Manual
23		Copy the data on a location shared with RDW	**IVG**	Monthly	Manual

4 Use case #4: database auto Data sources

Type	Source	Abbr.	Collected data	Frequency
External sources	Centraal justitie incasso bureau	CJIB	• Car fines • Foreign car fines	Monthly
	Landelijke Eenheid van de Nationale Politie	LE	• External camera license plate images and metadata	Realtime
	Dienst voor wegverkeer	RDW	• License plate related information and vehicle status • Data on truck trailers • Data on small trailers and caravans	On demand
	NATO/ customs	NATO	• Military (Dutch and foreign) license plate information[2]	On demand
	Uitvoeringsinstituut werknemersverzekeringen	UWV	• Insurance information[3]	Monthly
	Customs	UCI	• Customs vehicle tax (BPM) [4] – declaration information • Customs vehicle tax (BPM) – other information	Weekly Monthly
	Lease companies	-	• Lease data	Monthly

1 Data comes in in an Excel sheet e-mailed to an employee
2 Insurance data from UWV and Toeslagen information from EH&I are currently no longer updated in Database Auto
3 ABD = Aangifte BPM Douane

4 Use case #4: database auto Data sources

Type	Source	Abbr.	Collected data	Frequency
Internal sources	Centrale administratie	BCA	• License plate data from internal cameras • Diplomatic license plates	Monthly
	Landelijke coordinatie auto	LCA	• Data on private use of cars (PGA data) • Addresses for license plate metadata	Bi-weekly
	-	GOA	• Open tax debts	Weekly
	Convenanten	CNV	• Tax covenants	Monthly
	-	BPMT	• Restitution on vehicle tax (BPM) data	
	Business intelligence competence centre	BICC	• List of business license plates queries • List of heavy vehicles queries	Monthly
	Expertisecentrum handhaving en intelligence	EH&I	• Toeslagen information[2] • Income data (from FLG) • Customer base data (from BvR)	Monthly
	-	PGAS, SURF	• Visual license plate observations	Realtime / on demand
	LOTUS applications	-	• Certificate holder information for non-private use of vans and cars (UZGB/ PGA)	Monthly
	-	ATK+	• Account managers for large companies	Monthly
	-	IKB	• Risk category, control medium/ small comp.	Monthly
	-	ETG	• BD phone directory information for login	Monthly
	Workflow applications	-	• Workflow data for logistical support	Realtime
	Motorrijtuigen onder architectuur, houderschapsbelasting	MOA, HSB'	• Data for filtering	Monthly / on demand
	AxiTaxi	-	• AxiTaxi visual license plate observations	Realtime

1 Data comes in in an Excel sheet that is e-mailed to an employee (Marius Pesch)
2 Insurance data from UWV and Toeslagen information from EH&I are currently no longer updated in Database Auto

4 Use case #4: database auto
Intermediate databases and applications deployed

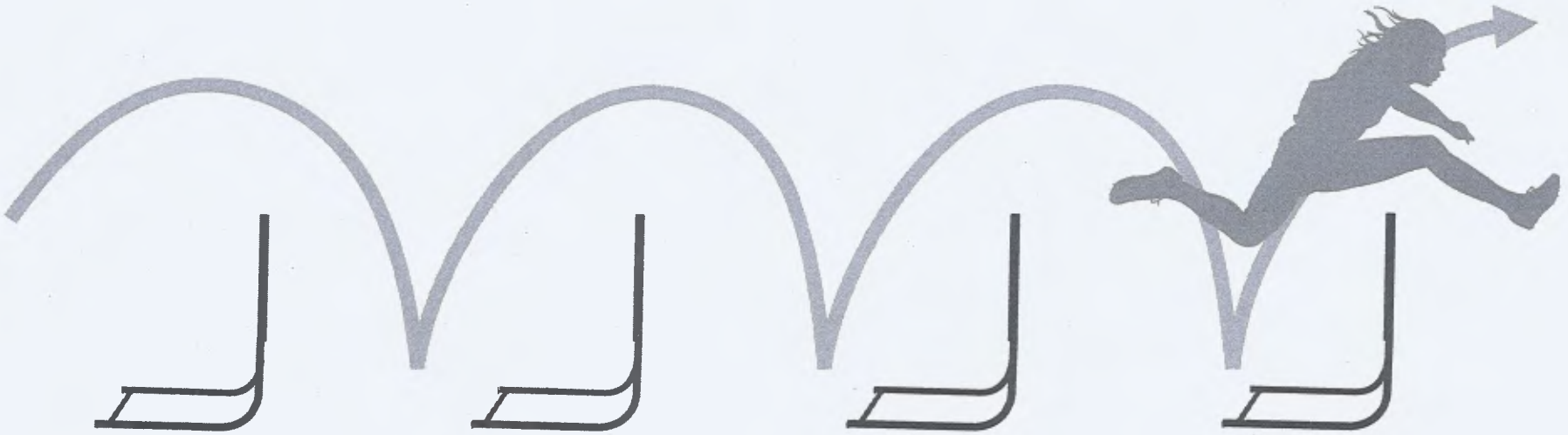
Database/ Application	Description	Update frequency	Internal use by	External use by	Respon sibility
MOA Motorrijtuigen Onder Architectuur	Database/ application suite that holds and processes all information related to heavy vehicles	Daily (automatic link from RDW)	CA, LCA, BelTel auto, others	-	CA
HSB Houderschapsbelasting	Database/ application suite that holds and processes all information related to cars	Daily (automatic link from RDW)	CA, LCA, BelTel auto, others	CBS	CA
HSB' (LOA) Houderschapsbelasting	Smaller version of HSB that handles all exceptions HSB can't handle (mostly foreign cars)	Daily (manual input of declarations)	CA, LCA, BelTel auto, others	-	CA
COA Centrale Ontvangers Administratie	Application that handles all payments within the Belastingdienst	-	-	-	-
CAV	Application responsible for creating and sending letters	-	-	-	-
DBA Database Auto	License plate data, fine data, vehicle status data, etc.	Varying	Toezicht, CA, customs, other internal BUs	-	CA
ISS	Filtered ECB images and data	Realtime	CA	RDW	CA
BOFL	ECB images and data	Realtime	CA	-	CA
TZT	ECB images and data	Realtime	CA	-	CA
GEODAN	Commercial software to convert GPS location information into address	Monthly	LCA	-	LCA

4 Use case #4: database auto Key process metrics

Metric	Automated number plate recognition		Implication
# Sources	A total of **22 data types** deployed • 15 internal sources • 7 external supplier	›	**Variety of data sources** deployed with different degree of automatization
# Process steps	A total of **23 process steps** were identified within the process of which: • 3 automated • 4 semi-automated • 16 manual	›	**Many manual process steps** (~70%), mostly around handling data and checks
# Hand-overs	~19 hand-overs identified, mostly between BCA and LCA	›	Several **hand-overs** of responsibility, mostly informal
# Filter and control steps	**5 filter and control steps** are performed throughout the process	›	5 filter and control checks, rather late in the process resulting in up-front storage of data
# Intermediary systems and applications	A total of **10 intermediate databases / applications** are deployed throughout the process	›	Deployment of **many intermediate systems** • Databases also used for other processes • Applications: often for formatting purposes

Table of content

5 Findings and next steps Approach



1 Findings

- Compile a comprehensive list of findings
- Group findings in respective categories

2 Projects / ongoing initiatives

- Compile a list of ongoing / planned initiatives
- Group initiatives in corresponding categories

3 Initiatives to findings mapping

- Map initiatives to findings to reveal potential areas of improvement

4 Next steps

- Outline and discuss next steps

5 Findings and next steps
Consolidated list of findings (1/4)

Area	Observations	Observation made in use case			
		#1 VIA	#2 BVR	#3 CBS	#4 Auto
Data governance	1 Multiple data governance frameworks that can be enhanced / aligned	✓	✓	✓	✓
	2 Varying transparency on volume and type of external data collected				✓
	3 Strengthening of centralized control and management of external data sources potentially required	✓	(✓)		(✓)
	4 High number and wide variety of external and internal data sources used	✓	✓	✓	✓
	5 Multiple parties will collect and process the same data fields, potentially leading to versioning issues and inefficiency	✓	✓		(✓)
	6 Limited organisation-wide framework for assessing data proportionality			(✓)	✓
	7 Business provides input on new data requests, but final decisions taken by Central Administration (CA)	✓	(✓)	(✓)	
	8 Sometimes fragmented responsibility and limited transparency on accountability for end-to-end processes, which span multiple groups	✓	✓	(✓)	(✓)
	9 Limited transparency on decision making process and mandate along a single process	✓	✓		✓
	10 Different data definitions across business and IT sometimes lead to a misalignment of business requirements	(✓)	✓		(✓)

✓ Observation identified and confirmed
(✓) Observation likely, but not confirmed

5 Findings and next steps
Consolidated list of findings (2/4)

Area	Observations	Observation made in use case			
		#1 VIA	#2 BVR	#3 CBS	#4 Auto
Data security and user access management	11 Manual data collection processes in place may lead to operational errors / risks	✓	✓	(✓)	✓
	12 Manual data delivery with non-standardised / inconsistent controls			✓	✓
	13 Limited degree of standardisation of external data supplier management process and system(s) deployed	(✓)	(✓)		✓
	14 Access to key databases is mostly restricted, but can be potentially more closely monitored and actively managed	✓	✓		✓
	15 Mostly decentralised decision making on database access, e.g. by team manager	✓	✓		✓

✓ Observation identified and confirmed
(✓) Observation likely, but not confirmed

5 Findings and next steps
Consolidated list of findings (3/4)

Area	Observations	Observation made in use case			
		#1 VIA	#2 BVR	#3 CBS	#4 Auto
Data processing	16 Supplier service quality (per SLAs) not closely monitored at data collection	✓	✓		✓
	17 Significant manual processing steps	(✓)	✓	(✓)	✓
	18 Time consuming/inefficient set-up of automated data transfer	(✓)	(✓)	✓	(✓)
	19 Data filtering and quality assurance steps partially at a later stage of data processing cause additional storage / processing delays in case of poor data quality	✓	(✓)		✓
	20 Variety of locally developed applications (LOA) / centrally developed applications (COAs) deployed for operational use: • Limited transparency on ownership and use of LOAs • Maintenance by business unit • Documentation mostly not standardised or unavailable/out-dated		✓	✓	✓
	21 Multiple similar and interim data sets with varying control, thus resulting in partially deviating results and use of intermediate results / data	(✓)	✓		✓
	22 High number of intermediary systems deployed, mostly used as internal sources	✓	✓	(✓)	(✓)
	23 Business logic partially incorporated into data storage with limited documentation on exact business rules		✓		✓
	24 "End of life" stage systems posing challenges to updating central systems due to multiple/non-transparent dependencies		✓		

✓ Observation identified and confirmed
(✓) Observation likely, but not confirmed

5 Findings and next steps
Consolidated list of findings (4/4)

Area	Observations	Observation made in use case			
		#1 VIA	#2 BVR	#3 CBS	#4 Auto
Business process	25 Limited standardised assessment of criticality of data (with regards to relative prioritisation & timeliness/quality expectations) provided by BD to 3rd parties			✓	
	26 Single point of contact (SPC) not entirely used by customers			✓	
	27 Largely informal processes to: - ensure communication and impact assessment of changes - ensure timely/proportional handling of 3rd party data requests	✓			(✓)
	28 Application design and development process partially fragmented with limited involvement of business throughout development process		✓		
	29 Systems, data models and applications are sometimes repurposed for alternative or additional use		✓		(✓)
	30 Multiple systems and applications used to track data processing status		✓		
	31 Dependencies on key employees		(✓)		✓
Other	32 Limited visibility on system release plans for coordination of deadlines			✓	
	33 Limited alignment on vision for future data storage model		✓		✓

✓ Observation identified and confirmed
(✓) Observation likely, but not confirmed

5 Findings and next steps
Overview of projects (1/2)

Area	Project	Content description	BU/Owner	Scope
Data governance		• Data delivery portal upgrade: contracting portal supplier	IVG	Data fundament
		• Covenant Registration: securing up-to-date supplier and customer contracts	TQA	Data fundament
	-	• Administrative Organisation: internal control and function standardization	TQA	Data fundament
	INFO38	• MIH as data fundament	CIE	-
	GEG092	• MIH as new data fundament: standardised data fundament with short time to market and included data from 40 sources	CA	Data fundament
	GEG104	• Metadata: maintaining continuity of data sources, improving data consistency and quality	CA	Data fundament
Data security & user access mgmt	GEG133	• Replace current temporary facility (BET RNI application resulting from GEG012), avoiding bottlenecks	CA	Data fundament
	GEG013	• Enhancing BRK (Kadaster): new link to land registry, 1-to-1 access to BRK data using system services from 2016	CA	Data fundament
	GEG014	• Enhancing WOZ (Basisregistraties): new link to real property data, 1-to-1 access to to WOZ data using system services from 1.1.2017 on	CA	Data fundament
	GEG087	• Enhancing BAG (Basisregistraties): new link to registration addresses and buildings, 1-to-1 access to to BAG data using system services from 1-1-2017 on	CA	Data fundament
	GEG089	• Develop connection to base register persons (BRP)	CA	Data fundament

Source: Initiatives Review.pdf

5 Findings and next steps
Overview of projects (2/2)

Area	Project	Content description	BU/Owner	Scope
Data security & user access mgmt	GEG096	• Digitalisation of insurer's data deliveries used for VIA, CRS and FATCA	CA	Massive processes
	GEGxx2	• Further development of AIG	CA	Interaction
Data processing	-	• Business data infrastructure: Data administration, Data stewardship, Production control	BICC	Data fundament
	-	• Metadata registrations, product portfolio, data design, quality business rules	TQA	Data fundament
Business process	GEG118	• Setting up a process to report data back to the holder of basic registration	CA	Data fundament
	-	• Quality assurance framework implementation: Legal compliance check, Quality self assessment, Output quality control	IVG	Data fundament
Other	GEG100	• Combat international wealth tax evasion and comply with FATCA, CRS and other obligations	CA	Interaction
	-	• Data infrastructure test strategy	BICC	Data fundament

Source: Initiatives Review.pdf

5 Findings and next steps
Potential additional enhancements (1/2)

	Area	Major findings	Current activities underway	Potential additional enhancement
Data management	**Data governance**	• Need of data governance framework alignment, incl. responsibility, proportionality, decision making, etc.	-	Support development of vision and strategy to allow a single BD-wide framework for data management
		• Limited centralised control of data sources, incl. standardisation of external supplier mgmt., SLA monitoring, etc.	• Data delivery portal upgrade • Covenant registration	Support short-term standardisation / collation of external supplier setups and management
		• Data collection / data copies by multiple parties	• MIH as standardised data fundament • Metadata: maintaining continuity of data sources, improving data consistency and quality	Support on future data model strategy & vision (IV accent)
		• Need of alignment on definitions between business and IT		
	Data security & user access mgmt.	• Operational risks based on manual data collection / delivery and non-standardised controls	• Automation of data collection / enhancements of data sources	*Support as part of external supplier mgmt.*
		• User access monitoring and management, incl. decision making	• Local user access review initiatives, e.g. on database Auto[1]	Further assessment and short-term enhancements to existing processes / framework for access management and review

1 Initiatives not part of data related project list, information provided by CA / LCA experts

5 Findings and next steps
Potential additional enhancements (2/2)

	Area	Major findings	Current activities underway	Potential additional enhancement
Data management	**Data processing**	• Variety of locally developed applications (LOAs) deployed	• Rationalisation program started beginning of 2015, voluntarily submission of important LOAs for functionality adoption[1]	Provide support in accelerating on-going effort to identify and enhance management / framework
		• Numerous intermediate systems (partially "end-of-life" stage)	• Business data infrastructure: data administration, stewardship, production control • Metadata registrations, product portfolio, data design, business rules	*Provide support aligning implementation plan with data model strategy where necessary*
	Business process	• Largely informal processes on implementing changes, hand-overs and non-standardised documentation, thus key employee dependencies	• Setting up a process to report data back to the holder of basic registration • Quality assurance framework implementation: Legal compliance check, Quality self assessment, Output quality control	*Provide support in accelerating on-going effort to identify and enhance management / framework*
		• Repurposing of systems	• Local system rationalisation / renewal initiatives, e.g. in Collections [1]	Provide support aligning implementation plan with data model strategy where necessary
	Other	• Limited alignment on future data model	• Data infrastructure test strategy	Support on future data model strategy & vision (IV accent)

1 Initiatives not part of data related project list, information provided by CA / LCA experts

5 Findings and next steps
Next steps

- The findings outlined in this document were presented to key stakeholders on December 3rd 2015, final discussion in Jan 2016

- Based on the findings presented in this document, two immediate next steps were identified:

  i. Launch an initiative to set the overarching vision and strategy for data management

  ii. Create an interim data management forum to monitor and steer ongoing short term data management initiatives

Appendix

Table of content

A Approach
Use case questionnaire (1/2)

1. High-level process per use case
2. Special topics for the process and planned developments
3. General concerns, best practices and key issues
4. Process steps in particular, based on (but not limited to) following information per process step:
   a) What is done?
   b) Who is responsible?
   c) When is it done?
   d) How is data processed (manual/automated/LOA etc. processing)?
   e) How often is it done in a typical use/how often is the process step picked-up by another ad hoc process (out of the regular cycle)?
   f) Is the process step bespoke or general?
   g) What governance and policies are applied (in practice)?
   h) Is the process step documented?
   i) Is it controlled i.e. is the result checked and the decisions repeatable?
   j) What is the input?
   k) What is the outcome/what is the 'leakage' (usage by other parties/processes)?
   l) What are the known risks/issues?

A Approach
Use case questionnaire (1/2)

m) Where are bottlenecks? Long waiting times between steps? Anecdotal issues?

n) How does all of the data come together in advance of any deadline? When does the data collection begin?

o) What level of rework/correction of errors is required? How long/how much effort does data correction take? Do we know the drivers of these errors?

p) What is the number of staff involved in the process at the BD at each stage of the process? Who "owns" the process at each stage?

q) What is the process for defining the data structure and requirements at each step? Who can request changes in the data structure, how are those changes evaluated, how are they communicated to suppliers, and how are they communicated to upstream users of data?

r) Who can access the key databases? Is data provided on an ad hoc basis to additional users that request it? How is access tracked? Is the data masked when sent through to users? Anecdotes?

s) How does the further processing look like? Can you support us construct the process in the same manner or do we need to speak to another party (to whom exactly)?

t) How is data/updates fed back to the database?

u) Are there any developments planned?

v) General concerns?

A Deliverables details Results achieved

Deliverable		Key elements	Results
1	High-level overview	• Overall data process map, i.e. how data (both internal and external) is collected, stored, transformed, validated, enriched, processed, accessed, used, etc. across the organization	✓ Developed a high-level overview of the overall data environment ✓ Consolidated detailed source list incl. categorization ✓ Developed a categorization framework for capturing outputs for further detailing (agreed with working group) ✓ Captured observations on data processing through deep-dives on select use cases
2	Deep dive analysis of 3 use cases	• Further detail the data processing steps for a selection of three use cases	✓ Scope expanded to cover four use cases ✓ Completed deep dive reviews for each, incl. a summary of the key observations
3	Identification of key gaps and potential solutions	• In-depth analysis for selected key use cases based on best practices (agreed with key stakeholders) incl. recommendations	✓ Summarized observations from overall landscape and deep-dive use case analysis ✓ Highlighted potential areas for further enhancement ✓ Further discussions required to discuss implementation
4	Definition of target state principles	• High-level view of the target state • Coherent set of principles and standards for data processes and for the target model (incl. governance)	✓ Initial elements of data management outlined, further refinement planned in Q1/2016 ✓ Agreed to continue to further develop and define target state principles as part of an overall data management framework over Q1 2016
5	Phased roadmap	• Overview of phased implementation plan	✓ Prioritized next steps for further evaluating high priority observations from this initial review ✓ Agreed on high-level next steps for developing the target state data management framework ✓ Further planning and detail pending in Q1/2016

A Deliverables details
Key questions answered

	Key questions on the current state	Results achieved
1	Which data streams are currently in place?	• Developed a high-level overview of current data environment • Collected a comprehensive list of data sources (inputs) • Prepared a framework for categorizing key outputs
2	Which are the related systems?	• Developed high-level overview of the systems landscape with additional details for key systems (based on use case deep-dives)
3	What data standards exist and how are these applied?	
4	What key activities are performed related to data (collection, processing, quality monitoring & control, etc.)?	
5	Which functions are serviced through which data streams, from which sources?	• Captured the full end to end process for each of the four selected use cases, which includes additional details to address each of these questions • Additional observations captured (different level of detail)
6	How is data owned and managed and what does the overall data governance framework look like?	
7	How are decisions made on the sourcing, structure and use of data?	
8	How does data flow into various applications and reporting tools and processes?	
9	What kind of IV-support is needed for the different applications of data?	• High-level choices outlined for IT architecture and data management design, further detail to be discussed

A Examples to findings Examples (1/7)

Area	Observation	Example *(non-exhaustive list)*
Data governance	1 Multiple data governance frameworks that can be enhanced / aligned	• Many of groups have data governance standards in place (e.g. CA, BI&A); however there is no single agreed data governance framework which covers the entire organisation
	2 Varying transparency on volume and type of external data collected	• Limited centralised overview of all the data types / data suppliers to Belastingdienst
	3 Strengthening of centralized control and management of external data sources potentially required	• Business units collect some of the external data directly from the sources, employing own covenants with suppliers , e.g. Toeslagen, EH&I
	4 High number and wide variety of external and internal data sources used	• ~50 external source types identified along with more than 90 internal sources / intermediary systems
	5 Multiple parties will collect and process the same data fields, potentially leading to versioning issues and inefficiency	• License plate data changes hands multiple times between a number of parties including IVG, LCA, BCA
	6 Limited organisation-wide framework for assessing data proportionality	• No centralised organisation-wide framework for data proportionality assessment incl. specific measures e.g. for new data requests on vehicle data
	7 Business provides input on new data requests, but final decisions taken by Central Administration (CA)	• Business submits data needs, but has little influence on the final decision if the data is to be collected (Assessment framework in place in CA) e.g. for VIA database
	8 Sometimes fragmented responsibility and limited transparency on accountability for end-to-end processes, which span multiple groups	• Every step has an expert in place, however accountability largely not formalised across the end-to-end process • Many handovers within a single process (various BUs) with varying degree of standardisation • Split between massive/semi-massive data processing (CA/SMP) poses challenges to overall accountability for the data in BvR

A Examples to findings
Examples (2/7)

Area	Observation	Example *(non-exhaustive list)*
Data governance	9 Limited transparency on decision making process and mandate along a single process	• A chain manager role has been introduced within the process of pre-filled income tax statements, but challenges due to non-formalised mandating of the chain managers
	10 Different data definitions across business and IT sometimes lead to a misalignment of business requirements	• Data requests mostly based on physical usage instead of business needs, e.g. request for particular data field not for information type • Data definitions are well-known within a single unit, however limited visibility of the definitions for other units

A Examples to findings Examples (3/7)

Area	Observation	Example *(non-exhaustive list)*
Data security and user access mgmt.	11 Manual data collection processes in place may lead to operational errors / risks	• Data from some external sources provided on portable devices (CD/DVD) or in paper form and transported to Belastingdienst by employees
	12 Manual data delivery with non-standardised / inconsistent controls	• Data delivered partially via physical shared drives ("Q:// partitions for auto database) or cloud platform solutions (DocZend in the case of data delivered to CBS)
	13 Limited degree of standardisation of external data supplier management process and system(s) deployed	• Process for supplier contract set-up not formalised - criteria and approach for legal approval not defined • No supplier management system in place to monitor contracts and SLAs – contracts saved in a directory and managed by multiple account managers (for each data type)
	14 Access to key databases is mostly restricted, but can be potentially more closely monitored and actively manage d	• Potential for greater visibility on who / when / why accesses key data for central databases such as VIA, BVR, etc. • Opportunity to more regularly evaluate existing user authorizations to ensure individuals still require and are eligible for access rights
	15 Mostly decentralised decision making on database access, e.g. by team manager	• Database access is granted after approval from team manager, with limited central oversight • Once database access is granted, this can only be changed if team manager actively requests removal of a particular authorisation

A Examples to findings
Examples (4/7)

Area	Observation	Example *(non-exhaustive list)*
Data processing	16 Supplier service quality (per SLAs) not closely monitored at data collection	• Occasional poor data quality and non-compliance with SLAs (e.g. incorrect data fields)
	17 Significant manual processing steps	• Customer registration process - data is manually processed, e.g. formatted to fit particular data model or checked
	18 Time consuming/inefficient set-up of automated data transfer	• It takes ~9-12 months to set-up an automated data transfer for data delivered to CBS via FOS (point-to-point transfer)
	19 Data filtering and quality assurance steps partially at a later stage of data processing cause additional storage / processing delays in case of poor data quality	• Quality of the data in the VSG environment is often poor and needs error corrections causing delays • Data fields containing zero instead of defined null have been detected in the past when compiling the data in VSG • Fileting of image data, received for the auto database on a rather late stage causing storage of data, which is not further used
	20 Variety of locally developed applications (LOA) / centrally developed applications (COAs) deployed for operational use: • Limited transparency on ownership and use of LOAs • Maintenance by business unit • Documentation mostly not standardised or unavailable/out-dated	• ~530 LOAs and ~900 COA currently registered, unofficial numbers expected to be higher • LOAs partially used for updating data fundaments / base data (NNO-Box, BAS etc.) • LOAs used for data processing, mostly around data formatting and status tracking

A Examples to findings Examples (5/7)

Area	Observation	Example *(non-exhaustive list)*
Data processing	21 Multiple similar and interim data sets with varying control, thus resulting in partially deviating results and use of intermediate results / data	• Data from the same source is collected / copied by multiple parts of the organisation, where it is processed differently ("own source of truth" within an organizational unit) • Douane has KIS (Klant Informatie Systeem), Toeslagen has FRS (Feiten Registratie Systeem) – both containing similar customer data as BvR
	22 High number of intermediary systems deployed, mostly used as internal sources	• A table within the process of data delivery to CBS that was supposedly no longer used by the system was removed, but 200 undocumented queries used that table and were thus broken
	23 Business logic partially incorporated into data storage with limited documentation on exact business rules	• Traceability of specific data, e.g. addresses, to the exact source difficult, due to multiple usage of business logic in intermediary storage
	24 "End of life" stage systems posing challenges to updating central systems due to multiple/non-transparent dependencies	• VAT data (OB) dependent on BvR, uses rather older formats • Many systems dependent on BVR thus BVR stores partially multiple formats of the same data e.g. data sets with and without diacritics

A Examples to findings
Examples (6/7)

Area	Observation	Example *(non-exhaustive list)*
Business process	25 Limited standardised assessment of criticality of data (with regards to relative prioritisation & timeliness/quality expectations) provided by BD to 3rd parties	• Limited visibility on time critical data deliveries from CBS point of view
	26 Single point of contact (SPC) not entirely used by customers	• CBS sends some requests directly to IT instead of account managers
	27 Largely informal processes to: - ensure communication and impact assessment of changes - ensure timely/proportional handling of 3rd party data requests	• Data field changes in the app / online interface are not necessarily assessed with CA to ensure data availability (additional information required in 2014, which could not be delivered to taxpayer by CA/banks) • Any changes done by Customs in their KIS system (BvR full copy) are not fed back to BvR
	28 Application design and development process partially fragmented with limited involvement of business throughout development process	• Business needs handed over from business unit to ICT for design, development and implementation, business unit (i.e. contractor) less involved along development process resulting in potential misalignment
	29 Systems, data models and applications are sometimes repurposed for alternative or additional use	• GBV system originally designed to store digitalized complaints, currently being used as a general PDF mail transportation system • The commercial software itACA is used instead of the governmental BAG because of extra functionality
	30 Multiple systems and applications used to track data processing status	• Customer data put into BvR, processing status tracked in RNO, activation tracked in WLO
	31 Dependencies on key employees	• Currently two employees on charge of the database auto maintenance with limited documentation • GEODAN software runs on a single employee laptop

A Examples to findings
Examples (7/7)

Area	Observation	Example *(non-exhaustive list)*
Other	32 Limited visibility on system release plans for coordination of deadlines	• Delayed releases on directly affected or related systems may result in non-availability of the data required for the delivery to CBS
	33 Limited alignment on vision for future data storage model	• Vision on data fundament form varies across business units, based on preferences

A Overview of experts
Experts involved

Topic	Expert	Contributor
Overall data stream landscape	• Rik Schut • Wouter Hooymaiers • Anneke Karels • Robert van der Breemen • Maarten Slot	• Joyce Tousalwa-Hukom • Marc Dirkx • Marko Bakker • Iris Monster • Wilfried Bloemberg • Fred Gerritsen • Heni Wien • Art Lighart • Jan-Roelof Pekel
Use case #1 Pre-filled income tax statements	• Rik Schut • Han van Eck • Johan Giezen • Wim van der Craats • Gerard Spruit	• Fred Gerritsen • Edward Diepmaat
Use case #2 Base customer registration	• Robert Baris • Bert Lukkien • Inge Cotte • Michael Mes • Angelique Bolder • Michel van Meteren	• Marco Bakker • Ronnie Brinkerhof
Use case #3 Data BD provides to CBS	• Kees-Jan Steenbergen • Gerko de Jeu • Joke Voskamp • Gert-Jan Kloosterman • Henk van de Koekelt	• Han van Eck • Lammert Broekhuis
Use case #4 Database auto	• Remko van der Burght • Rob Berentsen • Jos Gerats • Emiel van Wenum • Lammert Broekhuis	• • Claudia Timmermann van der Bosch • Julius Hermans • Bjorn Meijer • Hans ter Horst

A Glossary (1/2)

Abbreviation	Dutch	English
ABS	Aanslag Belastingen Systeem	Tax Statement System
AIG	Authentiek Inkomens Gegevens	Authentic Income Data
ANPR	-	Automated Number Plate Recognition
BPM	Belasting van Personenauto's en Motorrijwielen	Taxation of Person Vehicles and Motorized Vehicles
BZM	Belasting Zware Motorrijtuigen	Taxation of Heavy Vehicles
BRG	Beheer Rekening Gegevens	Management of Account Data
BRV	Basisregistratie Voertuigen	Basis registration Vehicles
CBS	Centraal Bureau voor Statistiek	Central Bureau of Statistics
CLO	-	Central Liaison Office
DUO	Dienst Uitvoering Onderwijs	Education Execution Service
DV	Dienstverlening	Service Provision
ECB	Elektronische camera beelden Externe camera beelden	Electronic Camera Images External Camera Images
ECM	-	Enterprise Content Management
EDW	-	Enterprise Data Warehouse
FIOD	Fiscale Inlichting en Opsporingen Dienst	Fiscal Intelligence and Investigation Service
FOS	-	File Oriented Services
HSB	Houderschapsbelasting	Ownership Tax
HSB'	LOA Houderschapsbelasting	LOA for Ownership Tax
IND	Informatie Naar Derden	Information to Third Parties
IH	Inkomensheffing	Income Levy
KB	Klantbeheer	Client Management
KR	Klantregistratie	Client Registration
KOI	Kinder Opvang Instelling	Childcare Institution
KvK	Kamer van Koophandel	Chamber of Commerce
LCA	Landelijk Coordinatie Auto	National Coordination Cars
LH	Loon Heffing	Salary Levy
LIV	Lokale Informatie Voorziening	Local provision of information

A Glossary (2/2)

Abbreviation	Dutch	English
LOA	Lokaal Ontwikkelde Applicatie	Locally Developed Application
MOA	Motorrijtuigen Onder Architectuur	Motorized Vehicles under Architecture
MRB	Motorrijtuigenbelasting	Motorised Vehicle Tax
NNP	Niet-Natuurlijk Persoon	Non-Natural Person
NP	Natuurlijk Persoon	Natural Person
OB	Omzetbelasting	VAT
OCR	-	Optical Character Recognition
OLAV	Online Aangifte Voorziening	Online Declaration Provision
PGA	Prive Gebruik Auto	Private Use Car
PIA	-	Privacy Impact Assessment
RDW	Dienst voor het Wegverkeer	Imperial Service for Road Traffic
SLA	-	Service License Agreement
SVB	Sociale Verzekeringsbank	Social Insurance Bank
TBU	Tegemoetkoming Buitengewone Uitgaven	Accomodating Exceptional Expenditures
TD	-	TeraData
TSZ	Tegemoetkoming Specifieke Voorzieningen	Accomodating Specific Provisions
ULB	Unit Limburg	Unit Limburg
UWV	Uitvoeringsinstituut Werknemersverzekeringen	Execution Institute Employee Insurances
VIT	Verzamel Inkomen Toeslagen	Collection Income Benefits
VpB	Vennootschaps Belasting	Company Tax
VSG	Verzamelen en Samenstellen VIA gegevens	Collect and Compile VIA Data