City of Mississauga
Finance Division

Data Analytics Strategy - Final Report

January 31, 2020

Building a better working world

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1. Executive Summary

Executive summary

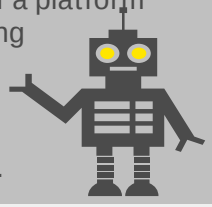
The Finance Division is reviewing advanced analytics capability that can enhance service delivery to stakeholders.

Globalization and technological advances are creating efficiencies in financial reporting and analysis processes. The City, like other government agencies and corporations, is undergoing significant change and facing many challenges as traditional operating models continue to evolve and transform.

Global trends in finance analytics

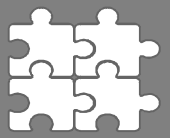
Shifting from manual support to automation

Non-invasive technologies such as robotic process automation can be overlaid on existing systems, allowing the creation of a platform compatible with ongoing developments in sophisticated algorithms and machine-learning tools.



Full services business partner

Business functions are looking to Finance to support in-depth performance assessment as well as more responsive and real-time budget analysis and spend analytics.



Sector comparison

Public sector organizations are looking for external opportunities for functional cost comparisons to understand and address funding pressures.

Talent retention

Talent retention and sourcing are critical as the Finance function evolves.

Identification of business value drivers

Expectations of providing faster, deeper and greater analysis, and more types and formats of information to deliver increased transparency.

Top three priorities for the future Finance Division[1]

- Improve big data and analytics capabilities
- Reduce finance costs through new technology
- Transform finance talent and recruiting strategy

"9 out of 10 companies will spend more on financial reporting technology over the next 2 years, with the priorities being cloud-based computing and big data."

[1] Percentage of Finance leaders that chose this priority as number one, as part of a recent global CFO survey.

Executive summary

EY was engaged to provide insights to the Finance Division on how to develop a Data Analytics Strategy.

Background

- The Finance Division currently uses a number of systems containing financial and non-financial data. This data is extracted and used for periodic financial analysis and to prepare insights. Reports are produced either by using standardized forms within the various software systems or by exporting the data into other programs, such as Microsoft Excel, and undertaking custom analysis.
- As the volume, complexity and frequency of data analysis requests has increased, the Finance Division recognizes the requirements to assess the tools and systems at its disposal. To date, significant work has already been performed (preliminary stage) by the Finance Division for upgrading their existing Enterprise Resource Planning ("ERP") system to S/4HANA, which will enhance data storage, processing and analytical capability in the future.
- With a timetable of 3 years before full S/4HANA implementation, the Finance Division is keen to identify options available in the short to medium-term to achieve enhanced data quality and analysis through understanding, assessing and adopting new tools and processes that can support users of data to perform better analysis today, and therefore providing a strong foundation for future data systems.
- In addition, embedding a data strategy, a governance policy and analytical tools to assist with delivering efficiencies will ultimately support future activity to implement new systems and software by focusing attention on data analytics ahead of changes.
- To support this initiative, EY has been asked to perform a review of the Finance Division's current state, identify trends and opportunities for using analytical tools, and to provide insights into how using this could enhance finance processes in the Finance Division via a pilot analysis.

Key findings

- This report provides the following insights:
    1. A summary of current state financial process opportunities and challenges.
    2. An indicative roadmap for the development of enhanced Data Utilization and Analysis capability.
    3. Guidance on the latest trends in data analytics, business intelligence and data aggregation available to the Finance Division.

Executive summary

Work has been performed in four stages

Primary objective

To create a roadmap for the development of a Data Utilization and Analysis Program. This roadmap will guide the Finance Division on how to take advantage of the latest trends and tools in data analytics, business intelligence and data aggregation in order to drive insights that support the Finance Division's financial management practices.

Step 1 – Analysis of current trends in finance analytics

Kick off

- Mobilized project resources
- Facilitated kick-off meeting

State of affairs

- Identified current trends in financial analysis, data aggregation and the use of data analytics in other municipal governments and other industries.
- Performed a market scan on the current trends and innovation of the CFO / finance function transformation. The team did a scan of 3-4 industries/sectors inclusive of government functions.

Step 2 – Perform a current state assessment

Analysis of current state

- Identified financial and non-financial data systems used by the Finance Division.
- Evaluated the current financial processes, including analytical tools, used by the Finance Division.

Interviews

- Understood and validated the current state with Finance Division resources to help identify gaps and limitations.
- Identified key areas of opportunity for process improvement and redesign.

Step 3 – Develop future state recommendations

- Identified trends and opportunities using the existing financial data applicable to the Finance Division.
- Described leading practices for improving Data quality and warehousing and existing data and analytics gaps.
- Reviewed the strengths and weaknesses of using the Finance Division's existing software versus the purchase of new software and made recommendations on software that were considered which included an estimate of cost and timing.

Step 4 – Test in a pilot study for an area of spend

- Developed a candidate pilot program through reviewing the opportunities across a number of financial reporting processes.
- Identified relevant steps from the future state recommendations and applied these to the pilot process.
- Develop an understanding of potential efficiencies from implementing the strategy to year-end close financial reporting process.
- Identified potential benefits available to the Finance Division from implementing a similar strategy across other financial processes.

Executive summary

A strategy to enhance the availability and utilization of data in the Finance Division should focus on four priority areas.

1 Data Governance

How is data being controlled?

- Develop data quality standards
- Formalize a data governance process
- Establish data quality reporting
- Establish workflows to monitor data quality reports
- Establish workflows to govern any revisions to data fields for changing business needs

2 Data Architecture

Where does the data reside?

- Build an inventory of enterprise-wide systems
- Map sources of data, including format and location
- Develop pathways for data accessibility
- Identify gaps in requirements and capability
- Determine key features for future upgrades

3 Data Analysis

What is the quality of the data?

- Review how data is consumed
- Understand the characteristics of data consumed
- Determine gaps in data quality
- Provide additional analytical tools to support data preparation
- Review opportunities for automation (data analysis)

4 Data Reporting

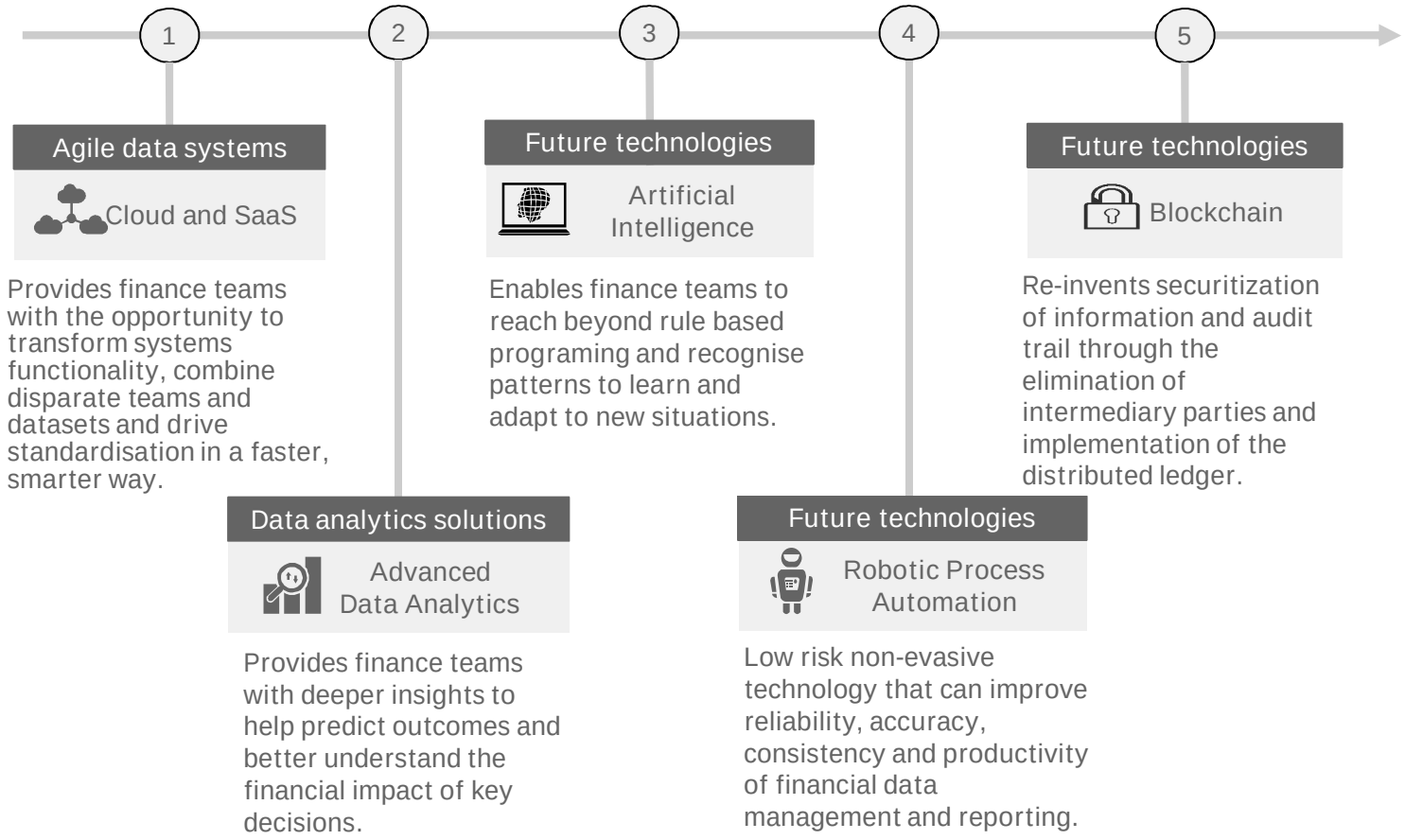
How is data being used?

- Assess tools available to support data reporting
- Provide additional analytical resources
- Provide training and enablement
- Review opportunities for automation (data reporting)
- Develop procedures for archiving of analysis

Executive summary

The Finance Division should consider innovative technology options that can support the implementation of their future data strategy.

As the digital revolution continues, finance functions are being asked to provide greater insight, quicker and with less resources. Thus, as the Finance Division engages further in enhancing data analytics and utilization, we describe where and how the innovative finance priorities can be implemented. Intentional consideration and successful implementation of these priorities will be critical to finance functions being able to meet the needs of their stakeholders going forward.



Executive summary

The Finance Division believes that significant efficiencies and benefits can be achieved by enhancing data analytics capability that helps transform service delivery.

The Finance Division anticipates tangible benefits from improved insights and redirection of personnel effort to higher value-add activities, coupled with more frequent reporting and monitoring, from increased use of data analytics tools.

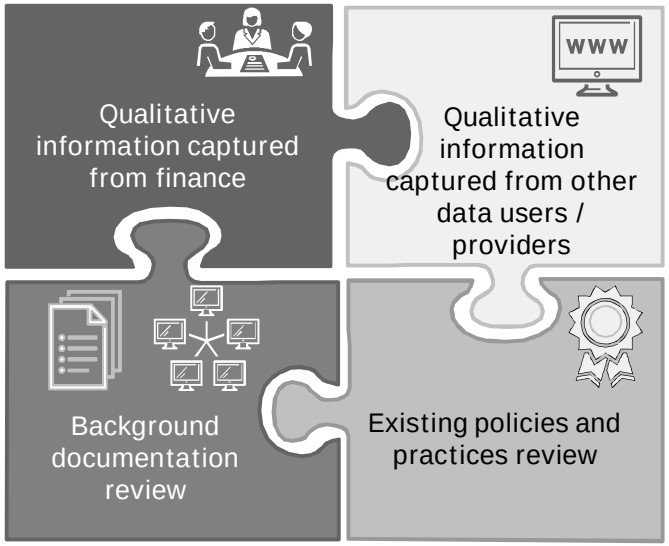
2. Current state assessment

Current state assessment

The first step is to understand what is currently happening with data analytics in the City's finance function.

EY performed a current state assessment of the Finance Division's analytical tools and use of data by performing the following activities:

- Conducting interviews with members of the finance function to collect their feedback on the current state, including challenges and opportunities for efficiencies.
- Conducting interviews with other stakeholders and users of data, such as IT, to collect their feedback on challenges and opportunities for efficiencies.
- Identifying existing software and tools used by the finance teams to perform analytics and develop reports.
- Reviewing background documentation, including policies, process maps, reports, technology maps, etc.



Current state assessment

The Finance Division is involved in the preparation of several reports, both statutory and ad-hoc, for use by various stakeholders.

The primary reports, as described below, are prepared by finance at various intervals throughout the year, e.g. monthly, quarterly and yearly. Additional analysis is prepared on an ad-hoc basis to supplement specific business unit or stakeholder requests.

The reports rely on the data from multiple systems. The data is available primarily in SAP (for financial actuals), Questica (for budgeting) or SharePoint (for WIP). For analysis and reporting, the data is exported to Microsoft Excel and supplemented on some occasions from other documentation, e.g. portable document files (PDF).

Report	Description
Financial statements	▸ The financial statements give a detailed overview of the City's financial performance at a monthly and quarterly period. These statements provide the forecast and variance explanations between budget and actuals for Labour, other operating and Revenue.
Labour gapping reports	▸ The labour gapping reports show the overall labour status of the various business units within the City in a monthly or quarterly period.
FTE update report	▸ The report shows the Full time Equivalents (FTE) status for each service area, current count versus budget for permanent full time, budgeted contract and temporary FTEs. It is prepared quarterly.
Overtime report	▸ The overtime report shows the overtime actual spend for the corporate services department. This is detailed by service area on a monthly period.
Quarterly Forecasting	▸ This report is presented to council. Year-end forecasting is provided in the three major categories (labour, other operating expenses and revenues).
WIP reports	▸ The report is presented to council, it is a review of all active capital projects. It provides a recommendation on which projects need to be closed and which ones require or are returning funding and is prepared twice a year.
Budget tables and reports	▸ This report comprises of operating tables that show 4 year budget and forecast by category and capital tables that show the 10 year capital budget and forecast. Both are presented in different ways providing high-level and more detailed outlook. This report is prepared multiple times during the budget cycle.
Budget monitoring report	▸ This is a detailed report by cost centre and G/L account number of actual spend versus budget. It is prepared upon request.
PCUR report	▸ An SAP report that provides YTD actuals, YTD budget and variance to budget. Prior period actuals and budget are also available in order to compare YOY trend. This report can be run by cost centre, service area, department or the entire city and is prepared upon request.

Current state assessment

The Finance Division works primarily with four applications.

A summary assessment of the primary financial applications is set out below:

SAP

- SAP is the primary accounting system used for collecting and aggregating financial actual data by the Finance Division.
- Data is input directly by users at business unit level
- Challenge: For analysis and preparation of reports, the data is exported to Microsoft Excel as SAP is not currently flexible enough to support the required analysis.

Questica

- Questica is the primary budgeting system for developing prospective financial information.
- Once complete, the budget numbers are moved from Questica to SAP to be stored in a single platform.
- Challenge: Questica and SAP have limited interaction (only once daily - overnight) leading to delays, potential gaps in the data and inconsistencies between systems for a period of time.

SharePoint

- SharePoint is primarily used for Work in Progress (WIP) data aggregation.
- The platform is updated weekly (during the WIP cycle period) and bi-weekly at other periods.
- Challenge: SharePoint is mostly used just as a data repository for the Finance Division and other teams to access data relating to Capital projects and is infrequently updated.

Microsoft Excel

- Microsoft Excel is primarily used by the Finance Division to analyze data extracted from the primary financial systems.
- MS Excel is also used as a reporting tool to prepare specific reports for different business units and other clients in the City.
- Challenge: MS Excel has limitations in regard to data volume and processing compared to other tools available, e.g. visualization software.

Multiple other applications (incl. for non-financial and operational data) exist, such as:

- Caseware – financial reporting
- Concur - expenses and invoicing
- CCG Faster – Service Center Chargeback and Fleet Goods Issue
- Class – Registration & Booking Refunds and Registration & Booking Sales
- eCity – eStores Sales and Online Parking Ticket Payment
- Hansen – Recoverable Works and Works General Ledger
- Manual – Accounts Payable (Vendor known), Cheque reconciliation and NSF Accounts Receivable
- TXM 2000 – Property Tax & tax refunds
- Max - Max-Security Deposit Refund
- Max ePermit - ePlans

Current state assessment

The Finance Division successfully performs high quality analysis and is taking positive steps to identify future enhancements to existing analytics systems.

1 Producing high quality analysis

The Finance Division currently produces high quality analysis on a timely basis to business units and stakeholders.

2 Reducing manual processes

The systems currently in use have helped reduce the manual steps required to perform analysis over the last number of years.

3 Pro-actively innovating

Seeking to innovate and transform how the City delivers its service, specifically the tools and processes relating to finance.

4 Developing an ERP upgrade strategy

The process of upgrading the SAP system to S/4HANA is underway.

S/4HANA Overview and Implementation Strategy

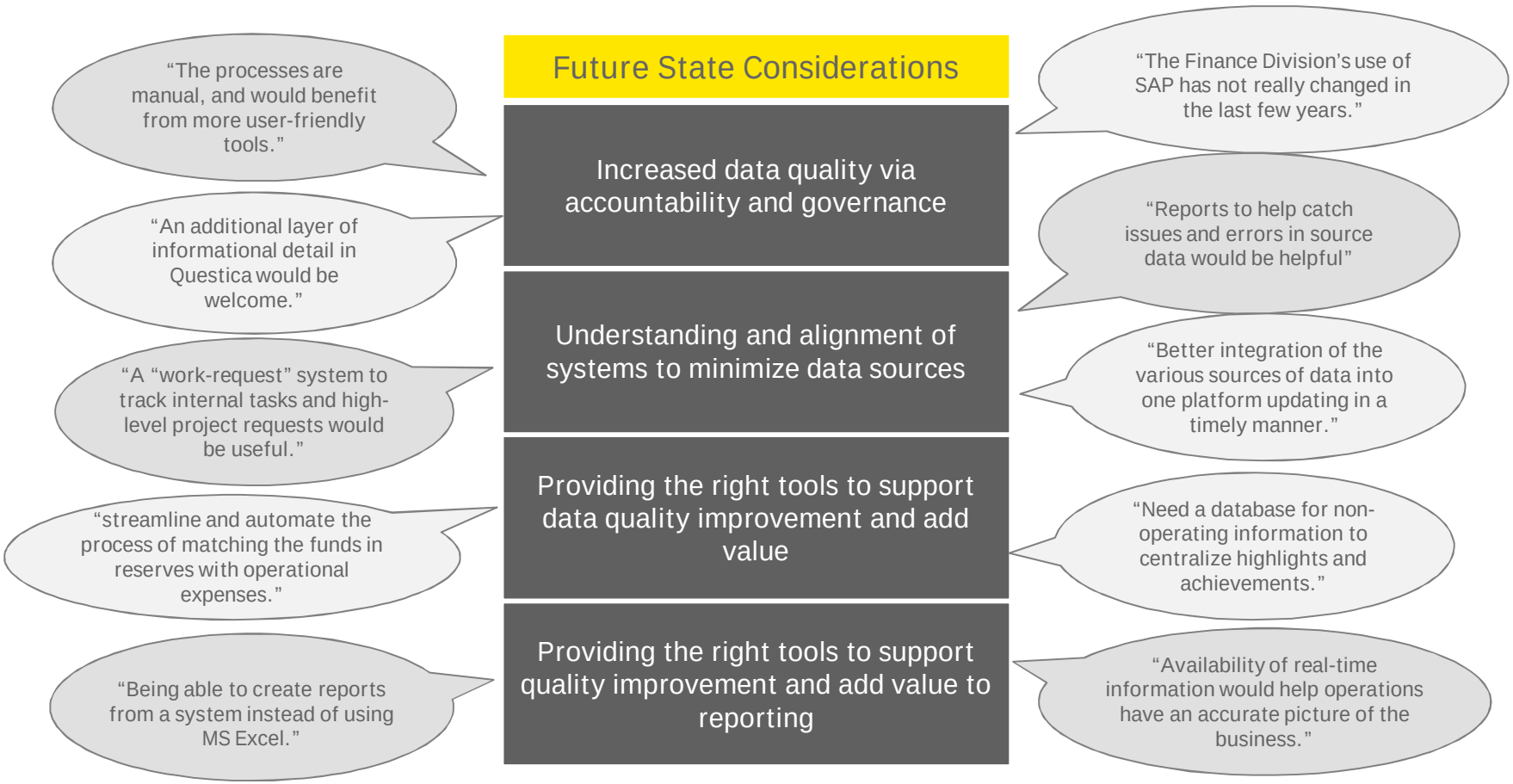
Steps have already been taken to enhance the quality of financial analysis by developing a 3-year technology plan to update the primary accounting system and move to S/4HANA.

- S/4HANA should have an easier way to capture data and out-of-the-box reporting features.
- S/4HANA is expected to help with data analytics and predictive analytics as the system's features are able to support this.
- S/4HANA will support data reconciliation. This is an ongoing challenge primarily due to the use of different software/systems and therefore will not solve the issue completely; the historical data existing in the system will also have to be reconciled.
- S/4HANA will help with data integrity and quality control.

The first step towards the implementation of S/4HANA is to perform an overall readiness assessment. The Finance team is currently working on this before the full upgrade goes live.

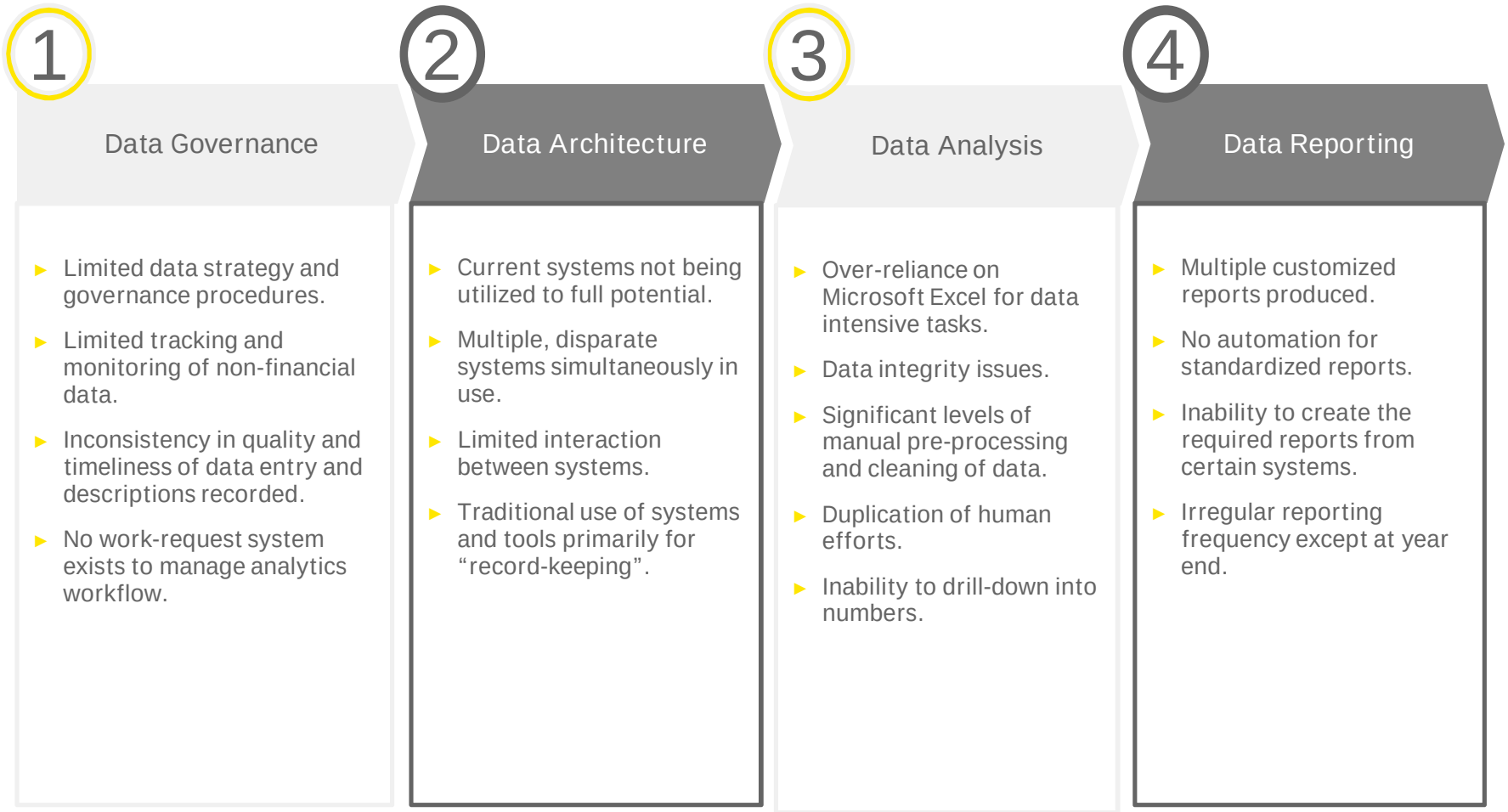
Current state assessment

Finance Division personnel, and other stakeholders, have provided feedback on key challenges experienced.



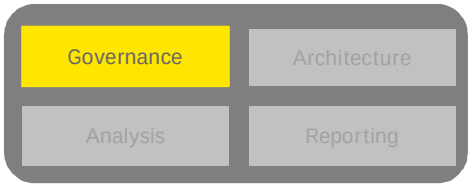
Current state assessment

The existing challenges identified can be categorized into four priority areas of analytics innovation.



Current state assessment

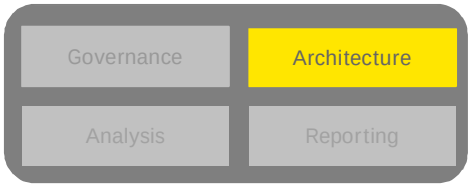
Data governance opportunities



Finding	Description	Implications
Limited data strategy and governance procedures	► S/4HANA planning activity has encouraged further thinking regarding data strategy and governance, and future state financial analysis. ► Further work is required to fully develop policies that will guide users, data utilization, and measure the effectiveness of the strategy.	► Minimal guidance (typically via standard operating procedures) is provided on how to use and manage data. ► This leads to inconsistencies in data sets, challenges with reconciling and late identification of issues.
Limited tracking and monitoring of non-financial data	► With non-financial data not being monitored, challenges arise as such information is not being available, in a different system or being tracked externally to a system.	► Important information is not readily available to finance team which slows down or holds up the reporting process. ► Considerable levels of additional work for the finance team to combine and analyse data from different sources. ► Certain decision-making processes may not take into consideration all important non-financial data that might be available.
Inconsistency in quality and timeliness of data entry and descriptions recorded.	► Data entry consistency and quality issues are common, for example, incorrect coding to ledger codes, misuse of description fields, and multiple references for one customers. ► Checks are performed infrequently and often only performed as part of the year-end process.	► More time is taken to review and reconcile data at year end. ► Significant work is required to clean raw data prior to performing analysis. For example, users of the data find it challenging to understanding the details and reasons behind expenses numbers ► If the data is not up to standard, the integrity of data will be questioned. More time is spent cleaning the data before any analysis is done which implies that time and effort is redirected away from higher value-added tasks. ► Analysis, and therefore decision-making is slowed down. Delays in obtaining accurate data on a timely basis will hold up other reporting activity.
No work-request system exists to manage analytics workflow	► The finance team does not have a work-request system where internal, ad-hoc tasks are registered and tracked. ► Such a system would enable tracking of the different types of ad-hoc tasks, analysis and reports that are assigned to members of the finance team, as well as the time and effort to complete those tasks.	► The time spent on ad-hoc activities cannot be properly tracked to measure time taken to complete the tasks / activities, benchmark against similar tasks and improve on efficiency within the finance function. ► Limited tracking leads to potential duplication of effort as multiple teams perform ad-hoc analysis without visibility of work done previously that could support the timely completion of these tasks.

Current state assessment

Data architecture opportunities



Finding	Description	Implications
Current systems not being utilized to full potential	► Certain SAP modules are not available or users are not aware of how to use (such as the Financial Close module).	► Users are performing tasks that could be done by the system if the functionality was available or widely used. As such, additional effort is spent on tasks that could be avoided.
Multiple, disparate systems simultaneously in use	► Multiple data systems containing important reporting data are in use across the entire business.	► The task of having multiple sources of data and having to search for information from these platforms is tasking and time consuming. ► This would limit the finance team from taking real time, accurate decisions.
Limited interaction between systems	► Interaction between the core financial systems is limited. For example, an interaction occurs once daily (overnight) between SAP and Questica. ► Data is pulled from different sources before analysis can be performed.	► This lack of interaction implies that most times, there will be conflicting figures on both platforms until the daily update has been done (overnight) which in turn might lead to errors in decision making from analysis done with the wrong data. Also, there will be delay in having same data across the various sources and there will be duplication of effort before analysis and decision making is carried out.
Traditional use of systems and tools primarily for "record-keeping"	► The primary function of current systems are to ingest and store information, with analytical capability not fully exploited by the Finance Division.	► The finance role has moved from transactional to a decision-making/insight-driven role. The changing role of finance means that there is more emphasis on partnering with business functions. ► As a result, data and factors to consider in decision making have evolved from purely financial to include non- financial and operational data, thus the need to track and measure non-financial data. This focus on just finance record keeping is limiting the role of the finance function within the Finance Division.

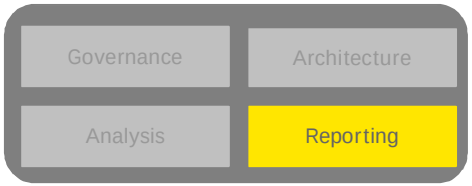
Current state assessment

Data analysis opportunities

Finding	Description	Implications
Over-reliance on Microsoft Excel for data intensive tasks	► Insufficient time is spent analyzing data as most time is instead focused on cleaning data. ► Limited access to Business Intelligence tools within the City e.g. to aid proper data visualizations. The current systems are unable to create reports so data have to be downloaded to MS Excel.	► This implies that there is not sufficient time spent on analysis and as such insight is barely generated from the data available to the team. Decisions that need to be made based on these insights will in turn be either delayed or left pending ► There is a timing and effort implication to this as analysts will have to extract the data, clean up and analyze before reports are created. Also, most reports are presented in tables from MS Excel whish isn't always visually appealing to readers and users of the reports.
Data integrity issues	► Standard operating procedures are not available to guide users on requirements with data entry. ► There is no system to track the accuracy of data when inputted in the different business units and to check for errors. These data are then used for analysis and reporting by the finance team and decision making by management.	► With no detailed guidance on what steps a user should employ to maximize data integrity. ► In addition, this creates additional work to verify the data in the various systems, creating challenges with tracking abnormalities and possibilities for fraud or errors to be overlooked. This could also prevent finance from obtaining actionable insights from the data.
Significant levels of manual pre-processing and cleaning of data	► There are numerous manual processes diverted resources away from focused analytical activities. This includes: ► Month-end & quarter-end close processes. ► Manual process with (journal entries related to) Bylaws & council approvals for funding projects. ► Process of matching/coordinating funds in reserves with operational expenses	► Additional time is spent on these manual tasks that should be instead spent on more value-adding activities such as proper analysis and gaining insight from the data, supporting the budgeting process with insight gained from analyzing the data, etc.
Duplication of human efforts	► Multiple teams are extracting and analysing the same data to perform similar analysis.	► Time is spent by different individuals doing similar tasks such as extracting data for analysis, which creates inefficiencies in processes and duplication of effort.
Inability to drill-down into numbers	► More detailed information is available in the systems maintained by the City's different divisions that is not easily available for users to drill-down and analyze in detail.	► Reviewers of data are unable to obtain detailed insights that can support better decision-making and evaluation of activity across the City.

Current state assessment

Data reporting opportunities



Finding	Description	Implications
Multiple customized reports produced	► Multiple custom report requests are made with irregular frequency.	► In order to produce customized, ad-hoc reports, time and effort is required to gather the data from multiple sources and analyze.
No automation for standardized reports	► Many financial reports are required in a standardized format, yet each year the same manual tasks are undertaken to fit the required format. ► Certain steps include transferring data from text or PDF files to the report template.	► Reporting teams repeat certain tasks each year that could be automated to help save time.
Inability to create the required reports from certain systems	► Some reports require additional work to extract and analyse underlying data. ► The team currently looks at the data that is available and then metrics are tailored to suit them instead of aligning with best practices.	► Time and effort is spent extracting data from different systems and manually tailoring the data to specific formats. ► Benchmarking can be a challenge as the team is not currently able to track all the required measures that could be used as key performance indicators.
Irregular reporting frequency except at year end	► A month-end close accrual is performed however the preparation of financial statements is done at year-end. There is no hard close for monthly or quarterly end.	► Without a closing process for month or quarter-end, significant work is required at year-end to reconcile the data as part of financial reporting.

3. Trends in data analytics

Trends in data analytics

A convergence of technologies is now driving the next phase of finance function transformation.

A range of new technologies and data tools are available to the Finance Division to prepare financial reporting and analysis for a more responsive future, overcoming many of the challenges identified.

Finance teams are no longer just seen as the stewards of financial data – they are seen as the analysers of data, able to extract forward-looking insight from large, fast-changing and wide-ranging data sets. They are expected to deliver advanced and predictive analytics, delivering granular reporting information more quickly, with more insight and with no room for error. At the same time, they must also protect and secure that data, as the regulatory and reputational cost of data breaches is a significant risk.

The results of a recent EY study; however, demonstrates that many finance teams do not have the information systems and data tools they need to extract forward-looking insights from large, fast-changing and wide-ranging data sets. Leading organisations are now looking to make the right investment decisions to enhance their financial reporting through improved data quality, data integration and depth of analysis. CFOs and their teams must not only re-evaluate their own competencies, but also equip their function with the right tools.

Advances in new technologies – such as the cloud, analytics, mobility, artificial intelligence (AI), blockchain and robotic process automation (RPA) – offer CFOs and their teams an exciting opportunity to redefine what the finance function should look like.

Question: what are the main challenges of transforming the operating model for corporate reporting? (% of respondents)

To address this gap between the tools that finance teams have at their disposal, and the innovative technology required, this analysis investigates the following:

1. Agile data systems, such as cloud-based enterprise resource planning (ERP), which can help increase integration and automation without the need for complex rationalisation of on-premise systems.

2. Data analytics solutions necessary to exploit the potential of innovative systems.

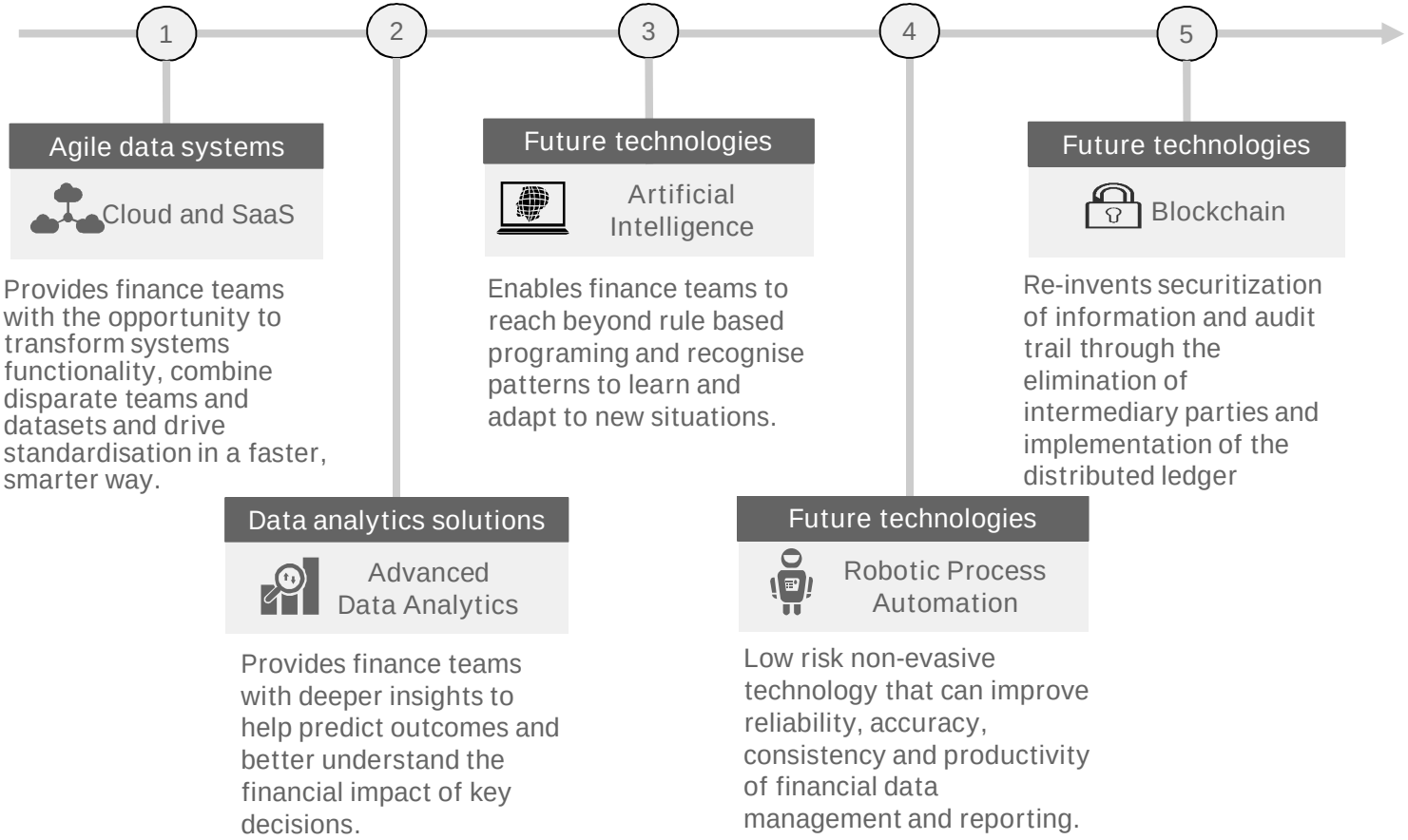
3. Future technologies, such as AI, RPA and blockchain, that exploits the ability to pull data from disparate systems, combine, cleanse and provide immediate analysis.

1. "How Can Reporting Catch Up With An Accelerating World?", EY, October 2016.

Trends in data analytics

The new wave of technologies is transforming the way that finance adds value to organisations.

As the digital revolution continues, finance leaders are being asked to provide greater insight, more quickly and with less resources. Thus, as the Finance Division engages further in enhancing data analytics and utilization, EY has identified where and how the innovative finance priorities identified below can be implemented. Intentional consideration and successful implementation of these priorities will be critical to finance functions being able to meet the needs of their stakeholders going forward.



Trends in data analytics

Potential benefits to the Finance Division from the new wave of technologies.

The issues facing the finance team can be largely addressed through the implementation of new technologies.

By embracing these technologies, the Finance Division will be aided in performing its daily, monthly and yearly tasks and operations in a more efficient and effective manner, leading to possible time and cost saving benefit.

Cloud and SaaS

With the proposed implementation of S/4HANA, the Finance Division will benefit from enhanced flexibility and be able to make rapid changes in assumptions in the budget, reduce cost, provide faster analysis and quicker decision making. These systems allow for better standardization of data and can help align multiple systems to create a single source of data.

Data analytics solutions

Advanced data analytics tools, such as visualization software, can support the Finance Division by providing a window into the data, particularly across multiple sources and systems maintained by different divisions. They improve the ability to predict outcomes, improve enterprise performance measurement by combining financial and non-financial data & help visualise data.

Artificial Intelligence

Artificial Intelligence (AI) supports the automatic generation of standardized output, including contracts, reports and correspondence. For the Finance Division, it could benefit the financial close process by helping investigate variances identified across the process and propose rationale, commentary and adjustments as applicable. AI can also enable faster analytics, trend prediction and automated reporting.

Robotic Process Automation

The daily operations and work of the Finance Division requires a large amount of manual intervention through transferring of data from documents or through systems to Excel / Word to prepare it in a reportable format. Using RPA, resources could be freed up to focus on higher value tasks, to ensure consistency across processes and tasks leading and reduce output variation.

Blockchain

The technology enables streamlining of processes and reduces the need for manual manipulation. As the certain information is maintained by multiple divisions in the City in their own subsystems, as well as in SAP (main General Ledger), the finance Team could use blockchain technology to reconcile financial transactions and increase transparency in budget planning, monitoring and execution.

4. Future state recommendations

Future state recommendations

Like any strategy, a well-considered set of objectives will help provide direction and ensure success can be measured.

Implementing a clear and concise Data Management and Analytics strategy would ensure Data integrity within the entity with users being able to put more reliance on the source data as the data being utilized throughout the system would be subjected to the same data quality, governance and utilization standards.

Define the Objectives

- Articulate a clear data management policy and analytics strategy.
- Increase user awareness of the City's data assets.
- Provide users with enhanced visibility and access to data and data structures.
- Increase faith in data quality and integrity.
- Ensure user adoption of data, reports, visualization and other analytic tools.
- Measure business impact from increasing user adoption of data analytics.

Develop Success Measures

- The City has articulated a clear data management strategy, educated users, ensured long-term adoption and positive impact through data use.
- Users have access, visibility, and an understanding of how to access and use data in the established, and future state, business systems.
- Users consistently and successfully use business systems to access enterprise data with confidence.

Future state recommendations

A strategy to enhance the availability and utilization of data in the finance function should focus on four priority analytics categories.

1 Data Governance

How is data being controlled?

- Develop data quality standards
- Formalize a data governance process
- Establish data quality reporting
- Establish workflows to monitor data quality reports
- Establish workflows to govern any revisions to data fields for changing business needs

2 Data Architecture

Where does the data reside?

- Build an inventory of enterprise-wide data system needs
- Map sources of data and systems, including format and location
- Develop pathways for data accessibility
- Identify gaps in requirements and capability
- Determine key features for future upgrades

3 Data Analysis

What is the quality of the data?

- Review how data is consumed
- Understand the characteristics of data consumed
- Determine gaps in data quality
- Provide additional analytical tools to support data preparation
- Review opportunities for automation (data analysis)

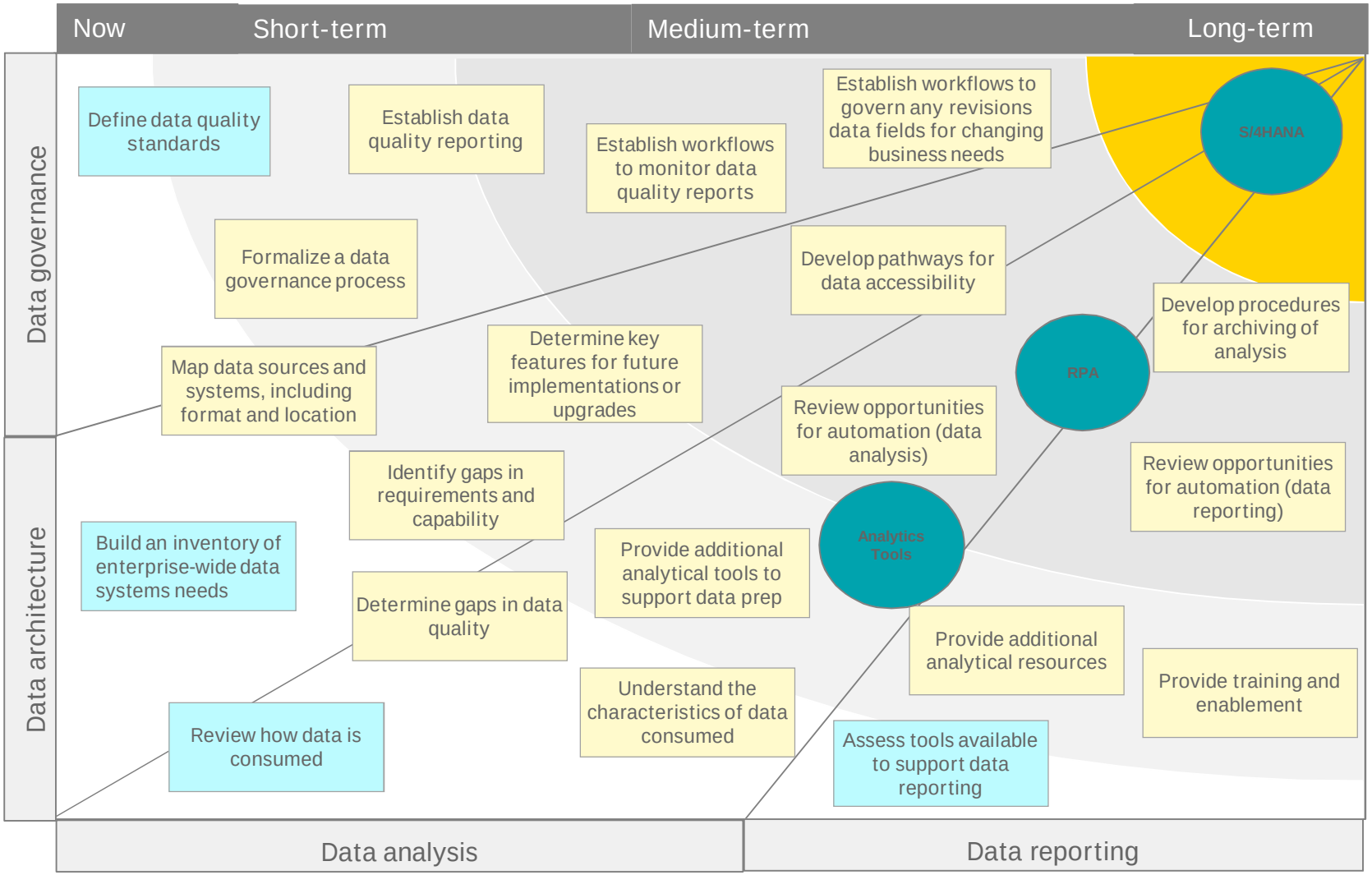
4 Data Reporting

How is data being used?

- Assess tools available to support data reporting
- Provide additional analytical resources
- Provide training and enablement
- Review opportunities for automation (data reporting)
- Develop procedures for archiving of analysis

Future state recommendations

Adoption of an effective Data Analytics & Utilization Strategy will lead to increased accessibility, quality, analysis and reporting of data as the City moves towards S/4HANA implementation.



Future state recommendation

Data Governance – immediate steps: focus on establishing standardized definitions and policies to help manage data integrity risk and increase data quality.

Define data quality standards

- Ensures steps are undertaken to establish consistent data quality standards across the City to reduce data integrity risk.
- Identifies high-value data requirements where effort should focus. The use of specialized software can monitor quality and help identify issues.

Activity	Key steps
Establish a working group to focus on improvements to data quality	▸ Identify a core group to lead data quality improvement in the short-term, including members of the Finance Division, IT and other key data users. ▸ Facilitate workshops with users of data and data systems across the City to identify key challenges with regard to data integrity, focusing on data consistency and reconciliation.
Establish common business language and definitions for data	▸ Rationalize and establish common terminology (e.g., data definitions, reference data, master data, meta data) across the City that will support consistent data entry, interpretation and usage.
Develop documentation for data standards, policies, processes and procedures	▸ Based on key outcomes of the working group, being to draft policies, standards, processes and procedures to ensure business alignment to best practices in data management. ▸ Develop guidelines and metrics for adoption of policies, standards, processes and procedures.
Communicate to data users	▸ Run training sessions for data users to introduce standards and policies. ▸ Provide short-term support as the users begin to adopt standards and policies. ▸ Closely monitor the impact of the standard policies.
Consider software options to support data quality management	▸ Identify system compatible software that can provide a window into data quality and provide monitoring of data quality across multiple systems and applications. ▸ For example, SAP Master Data Governance (MDG) may be an option in the short-term. SAP MDG is a master data management solution, that provides out-of-the-box, domain-specific master data governance to centrally create, change, and distribute, or consolidate master data across your enterprise system landscape.

Future state recommendations

Data Governance: further improvements in the accuracy, consistency, and confidence in underlying data could be achieved by establishing a governance framework and increasing monitoring of quality.

Objectives	Indicative success factors
Formalize a data governance process	► Clear identification of who governs the data. Data becomes organized by business function, with a clear functional owner, IT leader and a centralized data leader. ► Structures in place to provide direction on data management priorities for the City.
Establish data quality reporting	► Provides data quality reporting to users help assess how trustworthy the data is on a regular basis. ► Working with owners of the data to determine frequency of reporting and produce automated error reports via software, such as SAP MDG.
Establish workflows to monitor data quality reports	► Determine who monitors data quality to establish ownership and accountability. ► Embed workflows that provide regular analysis of data quality to a monthly data governance review team. Automation software can be used to notify users of data of failures in real-time.
Establish workflows to govern any revisions to data fields for changing business needs	► Implement an approval process to enable changes to data for users and owners. ► Changes such as revised data definitions, data value ranges and the requirement for new data have to be approved prior to being updated.

Future state recommendation

Data Architecture – immediate steps: fully align data users, owners and other stakeholders to increase transparency of data needs, availability and the tools currently available.

Build an inventory of enterprise-wide data systems needs

- Undertake steps to fully understand the source of data and the extent to which users have direct access or request custom queries.
- Frequent communication with users and other stakeholders, such as IT, will build an understanding of key processes, governance needs and effort required to develop.

Activity	Key steps
Enhance collaboration with IT	▸ Enhance interconnectivity between the Finance Division, IT and other key users of data through regular discussions and collaboration. ▸ Establish activities that will help align data policies and standards, review data requirements and requests for access to data.
Develop data management procedures	▸ Develop clear guidance on data management practices and regularly maintain and share best practices around data architecture, data modelling, data design and workflow. ▸ Ensure that data is profiled, analyzed and cleansed as well as defined and sourced in a consistent and effective manner. ▸ Should form part of wider data governance policy.
Review systems and datasets used	▸ Determine the full extent of systems and datasets that exist and are required across the Finance Division. ▸ Review datasets and sources, including identifying owners and users. ▸ Work with users and other stakeholders to develop increased transparency of requests for data into the future.
Review data warehouse capability	▸ Review existing capability to extract and store data for use by the Finance Division, including where requests are commonly made. ▸ Consider short-term opportunities to establish data repositories for recurring requests.

Future state recommendations

Data Architecture: developing enhanced data systems can ensure the data asset is easily searchable, accessible, trustworthy and scalable into the future.

	Objectives	Indicative success factors
	Map data sources and systems, including format and location	► Full understanding of what systems are in place, the data available, how the systems interact and the key users. Provide clarity regarding the flow of data across multiple systems, e.g. from SAP to CaseWare. ► Develop a full understanding of data used and its nature, i.e. unstructured vs structured.
	Develop pathways for data accessibility	► Establishes protocols to enable users to access the same data sets and transfer between resources efficiently. ► Use IT to develop in-house databases for customized analysis that automatically extract and aggregate requisite data from different sources, e.g. obligatory reserve monitoring.
	Identify gaps in requirements and capability	► Provides an understanding of what can currently be done at minimal cost, and what requires further investment to expand capability. ► Identify potential opportunities to rationalize and combine systems, particularly helpful for informing different business divisions within the City.
	Determine key features for future implementations or upgrades	► Provides a plan for upgrade implementation to ensure systems can be scaled easily and remain flexible ahead of any future changes. ► Ensures that data is in a format that is compatible with future upgrades.

Future state recommendations

Data Analysis – immediate term: enhance how existing software is used and provide training to resources to support an improvement in the quality of self-service analytics.

Review how data is consumed

- Much of the bespoke analysis undertaken by the Finance Division is performed in Excel and requires manual processing to extract and clean what is required.
- The Finance Division should consider developing internal controls and processes to manage the quality and completeness

Activity	Key steps
Develop standards to support better use of Microsoft Excel	▸ Define internal standards that control the quality of analysis performed in Excel. These can include basic "best practice" behaviours, e.g. no external links, file name consistency, etc. ▸ Put processes in place that support independent checking of key calculations and used for important analysis, e.g. peer review and approval levels. ▸ Encourage the use of checks to ensure data completeness within Excel files that process significant volumes of data.
Encourage increased use of available data analytics tools.	▸ Increase awareness of and access to existing tools, such as SAP Lumira. ▸ Provide additional training and user support.
Enable knowledge-sharing and collaboration for data analytics	▸ Form a small group of "super-users" or ambassadors within Finance Division that encourages take-up of advanced analytical tools and to embed controls or processes related to data quality. ▸ Enable data users to share better insights and analytical techniques to grow quality, maintain consistency and encourage innovation across the Finance Division.

Future state recommendations

Data Analysis: develop a future state where data can be gathered and analysed faster through the use of advanced analytics and automation.

Objectives	Indicative success factors
Understand the characteristics of data consumed	▶ Review the data to identify key features including metadata, fields and records. ▶ Clarity regarding the source of financial and non financial data reduces data integrity issues, inconsistencies and the time spent on extracting and manipulating the data for ad-hoc reporting.
Determine gaps in data quality	▶ Generate benefits from real-time data available for analytical tools to reduce the time spent on manual intervention. ▶ Identify potential opportunities for improvement in the quality of the data stored within various business divisions and in the central repository.
Provide additional analytical tools to support data preparation	▶ Self-service software, such as Alteryx, may assist with faster extraction, transformation and aggregation of data for preparation in reporting which will lead to less reliance/usage of MS Excel for preparation of reports. ▶ Other advanced tools, e.g. Optical Character Recognition (OCR) technology, could enable users to convert data from other sources to save time and effort in converting documents, such as PDF files.
Review opportunities for automation in data analysis	▶ Delays in the data extraction and gathering process, and transaction reconciliation process, could be overcome using RPA technologies, e.g. automating generation of accruals at period end to speed up the process of recording accruals. ▶ Identifying opportunities for implementing Extract Transform Load (ETL) tools to handle large structured and unstructured data.

Future state recommendations

Data Reporting: move towards an enhanced state of data availability and quality that will result better data utilization, analytics and reporting.

	Objectives	Indicative success factors
	Assess tools available to support data reporting	► The Finance Division currently has access to various tools, including SAP Lumira, for data analytics. ► Engaging data users to understand their needs will be important before determining whether any additional software should be acquired.
	Provide additional analytical resources	► Employing advanced analytical tools to obtain insights into the pattern of recorded financial and non-financial information will enable the ability to rapidly change assumptions in financial planning and effectively drill down to identify opportunities and challenges. This should be supplemented by resources that can support the transition of the Fiancé Division from “score-keeper” to business partner.
	Provide training and enablement	► Investment in the development of personnel and ongoing support to enhance the capabilities of the finance function, moving from a score-keeper to business partner. ► Enhance contribution to overall City objectives from higher value-add activities.
	Review opportunities for automation (data reporting)	► Time taken in preparing ad-hoc reports could be reduced through possible automation of the report generation process, such as the calculation of obligatory reserve fund spend. ► Standardizes the process and format of preparing, reviewing and distributing the financial reports throughout the City’s divisions and to Council.
	Develop procedures for archiving of analysis	► Accessible and understandable finance data could lead to more effective, faster decision-making in the future. ► Easy to use and interactive analytical dashboards and reporting can be shared quickly via mobile technology.

5. Pilot Case: Financial Reporting Process

Pilot case: financial reporting process

A study has been undertaken of a key reporting activity to demonstrate the potential benefits of implementing a data analytics strategy.

Overview

- Engagement sessions with the Finance Division have identified potential areas of improvement where current processes are characterized by heavily manual data checking and processing. Within existing processes, financial reporting is viewed as an area where opportunities for efficiencies may exist. The process runs over a 3 month period, from mid-December to mid-February with the objective of producing three statutory submissions: Annual Financial Statements, Financial Information Report and, recently added, StatsCan Report.
- Specific areas of opportunity relate primarily to 1) increasing data quality through implementing governance and automating data checks, e.g. reconciliations, and 2) automating specific manual tasks currently performed by the reporting team during the year-end reporting process and 3) producing higher quality interim financial analysis on a monthly basis.
- Currently the reporting team's roles are characterized by significant levels of manual data extraction and processing, such as cleaning descriptions, performing manual checks on data quality and combining data sets. In addition, the final reports are manually populated by copying and pasting data from various Excel files into the reporting templates. The manual effort involved diverts attention from producing reports regularly and performing deeper analysis on trends and performance.
- Together, the combined impact creates potential inefficiencies and diverts effort from performing high value-add tasks regularly, such as trend analysis and detailed monitoring of financial performance, that could enhance the quality and frequency of analysis, leading to better performance monitoring and decision-making capability.

Opportunity

- The City is in the process of developing an implementation plan for an enhanced ERP system, S/4HANA. To generate further efficiencies in financial reporting, the Finance Division could implement additional tools such as data visualization software, data transformation tools and automation of certain processes through RPA. A suite of data governance policies can assist with providing users with guidance on how to use information, set data quality expectations and perform regular checks for issues during the financial year.
- Areas with the highest opportunity for efficiency are in data entry, data processing and financial analysis. Implementing enhanced data management policies, systems and analytical tools could yield efficiencies and potential cost savings across the organization.

Pilot case: financial reporting process

Work has been performed to map the existing process, identify opportunities for increased use of data analytics and revise the process to indicatively show how to apply such capability.

Methodology

- A number of steps are performed to identify what an enhanced future state process could look like for financial reporting:
  1. Mapped the current state financial reporting process, including data entry steps and the location of information required.
  2. Engaged Finance Division personnel directly involved in the process to identify current state challenges.
  3. Obtained estimates of the time taken to complete specific steps within the current process.
  4. Mapped a potential future state financial reporting process.
  5. Identified options to support a potential future state reporting process.
  6. Applied an efficiencies range, in terms of effort saved from utilizing data analytics tools.
  7. Applied a cost savings range on total City budgeted expenditures.
  8. Applied an estimated implementation cost range.

Pilot case considerations

- Implementing a strategy to support the financial reporting process that not only generates a reduction in manual effort; but that also introduces capabilities in analytics and trending that can support increased reporting frequency, it is important that the City develops a plan of action. This can consist of: developing governance policies, identifying technologies available (and potentially in the pipeline, such as S/4HANA), assessing the system's impacts on the processes, iterating improvements, and launching the technology.
- A detailed vendor assessment will need to be completed prior to refining and confirming the technology costs associated with this initiative. The analysis draws on selected capability and is not exhaustive. The cost of such tools can vary significantly depending on the vendor selected as described earlier, and can often be a charge per licence or user.
- In addition, the pilot case does not explore or quantify the potential impact on all financial, IT, or other processes, whether ongoing or planned. To the extent that the pilot case would require additional resources in teams other than the Finance Division, these have not been quantified. In addition, any costs or efficiencies estimated are based on a percentage of the City's total operating budget and not from a zero cost or calculated return on investment basis.

Pilot case: financial reporting process

Currently the year-end financial reporting process takes in excess of 5 months to complete and deliver three statutory reports.

1 Data is entered ...

Business units update and adjust SAP and sub-systems accruals information for fiscal close process between Jan and Feb.

2 ...into systems, then...

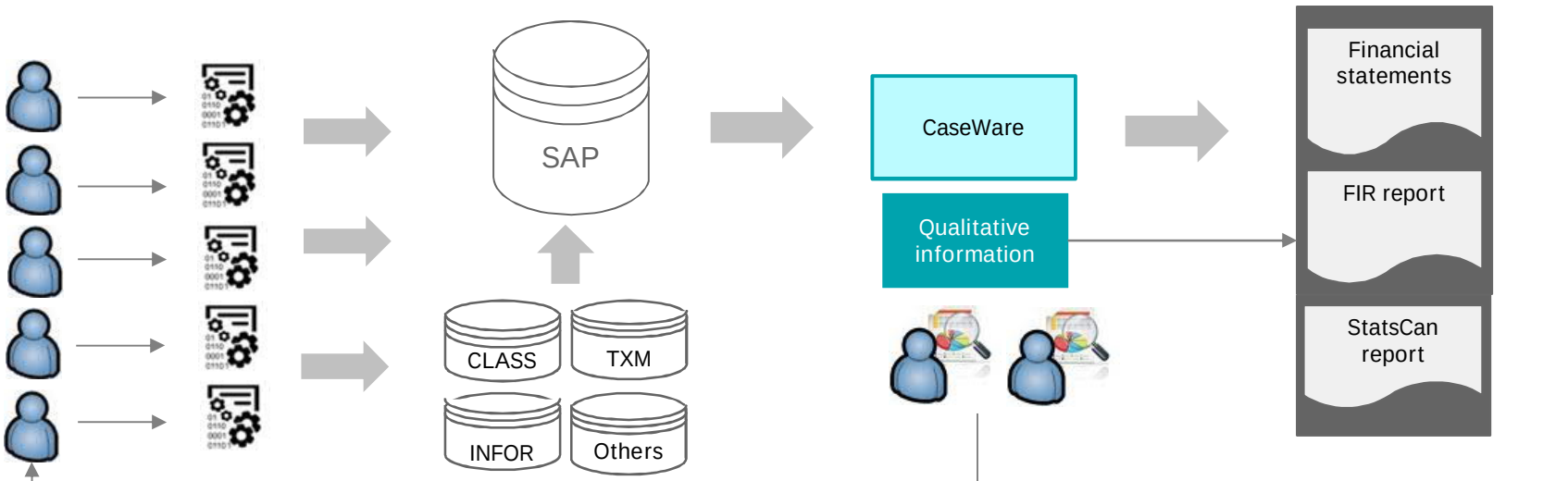
Data is stored in SAP and sub-systems, with financial data aggregated in SAP. The trial balance is fed into CaseWare for financial reporting analysis.

3 ..extracted & analyzed...

Between Feb and May, the financial reporting team analyze and review the data in CaseWare. A small amount of qualitative information (approx. 5%) is extracted manually.

4 ..to produce reports

Final output is extracted to reporting templates for review and approval. StatsCan report is prepared manually.



5 Review and validation

Financial reporting team undertake an extensive review and validation process with the data, leading to updating updates, adjustments and further analysis of revised outputs.

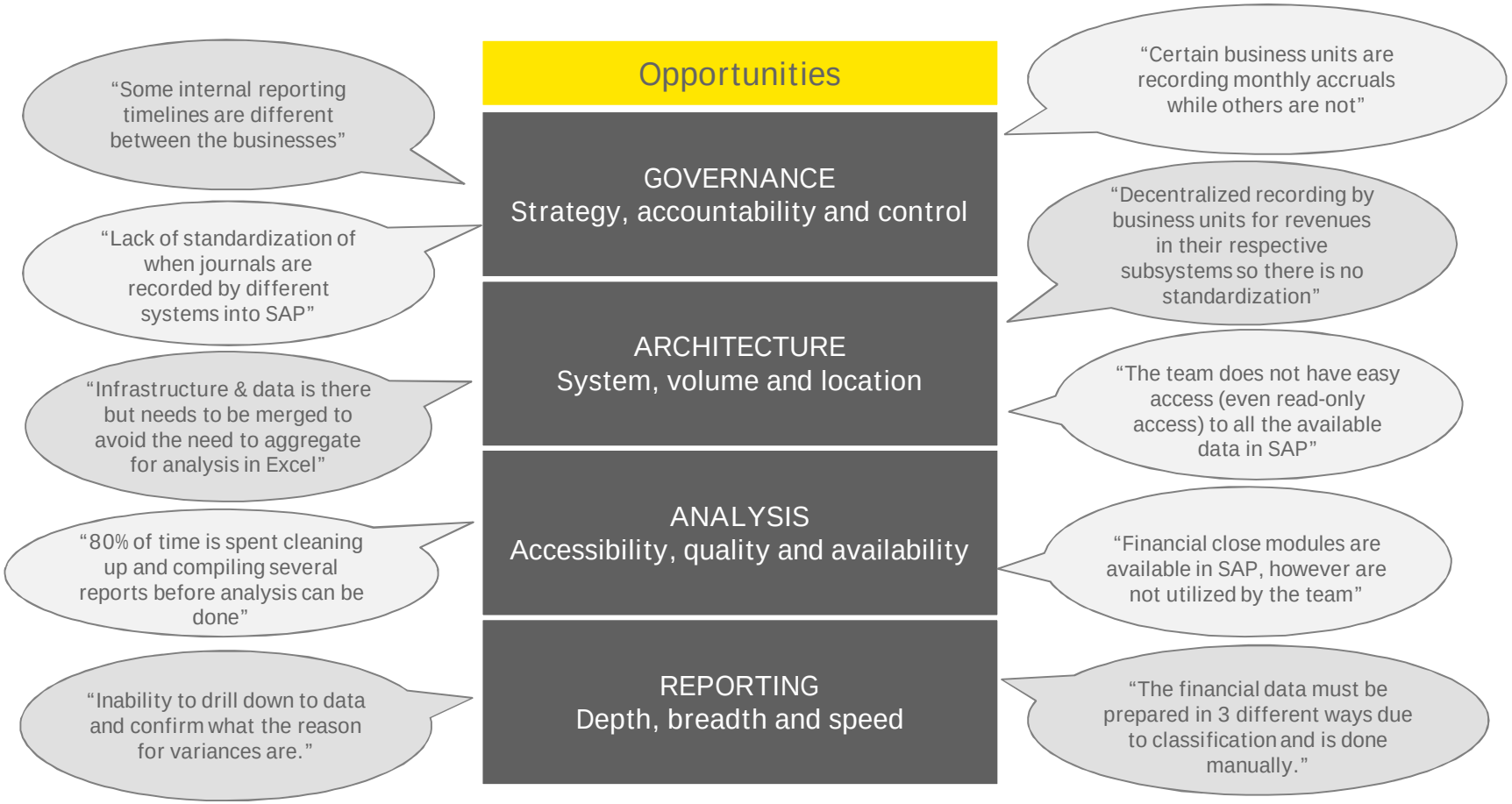
Key:

Automated

Manual

Pilot case: financial reporting process

Personnel involved in the year-end financial reporting process described similar themes identified in our initial current state analysis.



Pilot case: financial reporting process

The Finance Division considers that opportunities for efficiencies in the process can be created by adopting a data analytics strategy.

Process step	Process description	Issues
1	Business units update and adjust SAP and sub-systems accruals information for fiscal close process between Jan and Feb.	► Some accruals and reversals not recorded during the year, e.g. certain liabilities. ► Reconciliations are not performed regularly and require extensive analysis at year-end to validate the numbers. ► Quality of data entry varies across users. Details and descriptions provided often uninformative and insufficient; data not split between the correct fields. ► Data entry is prone to error, such as misplaced decimals, with limited visibility or monitoring of the inputted results before the financial year-end reporting period.
2	Data is stored in SAP and sub-systems, with financial data aggregated in SAP. The trial balance is fed into CaseWare for financial reporting analysis.	► Personnel involved in the reporting spend significant amounts of time accessing multiple systems to extract required data. ► SAP functionality not fully used to assist with reconciliation and checks typically performed manually. ► Certain data is unavailable to extract from SAP without specific requests of IT.
3	Between Feb and May, the financial reporting team analyze and review the data in CaseWare. A small amount of qualitative information (approx. 5%) is extracted manually.	► Data is extracted for review from multiple sources, in different formats and structures. The reporting team then takes the data and processes manually to obtain the base data required for analysis such provisions, disclosures, etc. ► Limited capacity to drill deep into the underlying data to analyse financial performance, identify trends and query variances to expectations which impacts quality of analysis.
4	Final output is extracted to reporting templates for review and approval. StatsCan report is prepared manually.	► Certain reports are expected to reconcile with the dollar. ► In the current year, a third report has been added which will require the same procedures to be followed, and be populated via Microsoft Excel and not CaseWare. ► Small amounts of information are manually added to support notes to the accounts or other data requirements, from review of documents such as pdf and Word files.
5	Financial reporting team undertake an extensive review and validation process with the data, leading to making updates, adjustments and further analysis of revised outputs.	► Once data is gathered, a validation process is undertaken with owners of data to query and challenge inputs. This feedback loop takes four months involving information sharing, reviewing, challenging, reconciling, amending data and performing additional analysis. ► Diverts finance personnel effort from performing regular reporting and analysis.

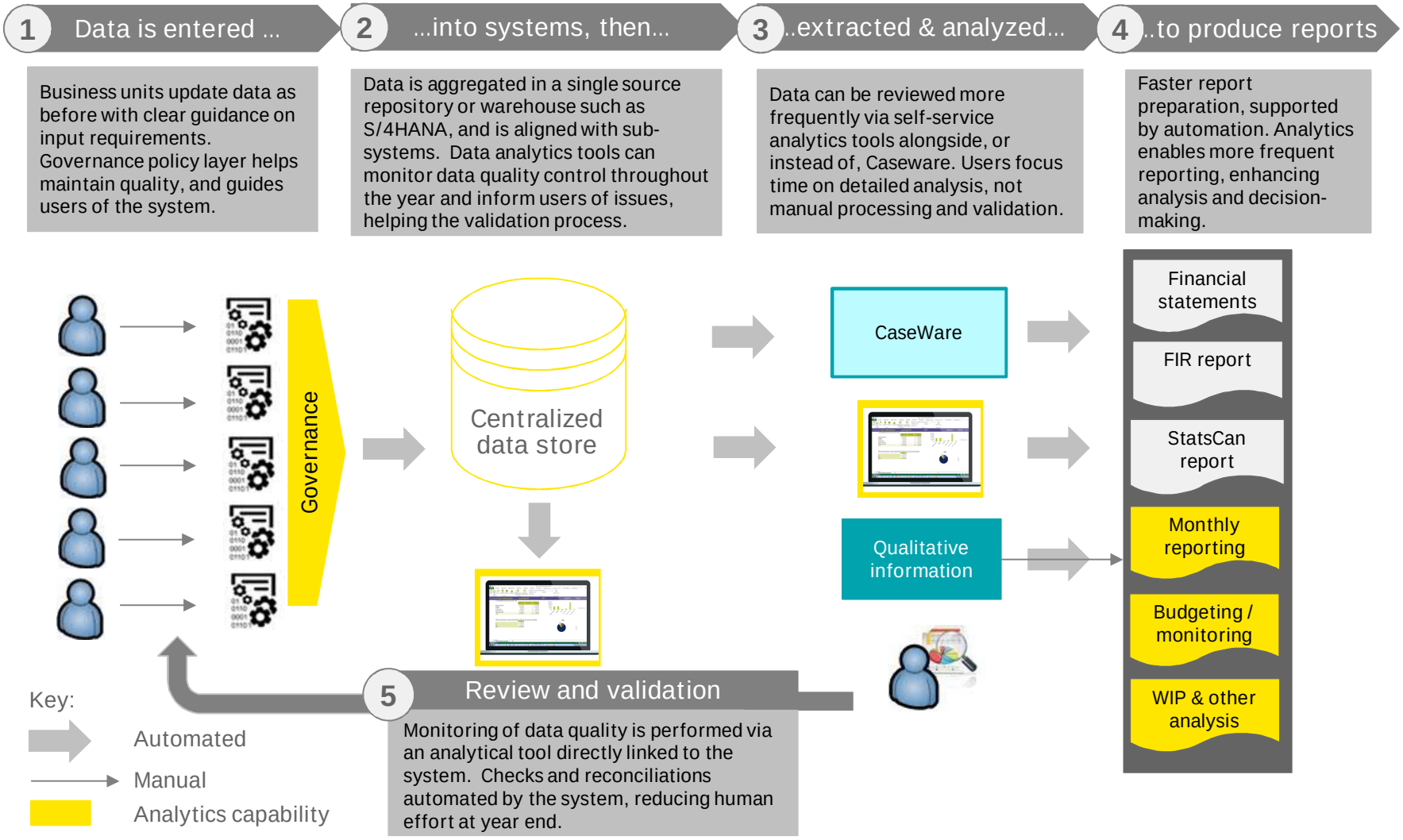
Pilot case: financial reporting process

An enhanced reporting process could incorporate a combination of technologies and enablers, coupled with better data governance and controls.

Process step	Process description	Efficiency opportunities
1	Business units update and adjust SAP and sub-systems accruals information for fiscal close process between Jan and Feb.	► Develop data governance policies to inform users on expectations of timing, content and ownership of data entries. ► Clear process owners identified, accountable and responsible to the extended data users at the City. ► Key reconciliations and reviews performed more regularly to mitigate impact on closing. ► Monitoring of reconciliations performed via an integrated analytical tool. Visualization software is used to assist with monitoring. Automation tools notify data owners of quality issues.
2	Data is stored in SAP and sub-systems, with financial data aggregated in SAP. The trial balance is fed into CaseWare for financial reporting analysis.	► A single or federated ERP that supports centralized data management in the long-term and provides additional analytical functionality to support year-end processes (among others). ► Centralized data source that draws required data (operation and financial) from all systems to a single store that refreshes daily. Access available to all users of information in the business. ► Review SAP features and consider where SAP modules or other software to automate reconciliations process can be used. Train users.
3	Between Feb and May, the financial reporting team analyze and review the data in CaseWare. A small amount of qualitative information (approx. 5%) is extracted manually.	► Create a central data source, with data quality monitoring procedures to support efficient data review and analysis process. ► Provide users with self-service software, e.g. Alteryx, and training will support faster data transformation and aggregation. Users can pre-define workflows and schedule tasks to help automate certain pre-processing tasks. ► Provide users with a data visualization layer into the central data repository will enable faster and deeper analysis to occur and provide earlier visibility of issues e.g. variances to budget.
4	Final output is extracted to reporting templates for review and approval. StatsCan report is prepared manually.	► Provide automation tools, or self-service software, such that the reporting team can automate the reporting process, enabling documents to be auto-populated and instantly shared with reviewers. Digitalization could also enhance the sign-off and review process. ► Data visualization software could be used to provide ongoing visibility of financial statements by connecting directly to the data source. ► Artificial intelligence capability could assist with extracting quantitative and qualitative data points from documents using OCR or NLP technology.
5	Financial reporting team undertake an extensive review and validation process with the data, leading to making updates, adjustments and further analysis of revised outputs.	► With a shared data source and data visualization layer, the process of querying and understanding the information is enhanced through consistency of access, recurring data quality monitoring and faster identification of issues thus enhancing the overall internal communication process. ► Embed a monthly reporting process and tracking of performance versus budgets.

Pilot case: financial reporting process

An enhanced process could generate benefits across other processes, transforming finance from a "score-keeper" to business partner.



Pilot case: financial reporting process

Potential cost reductions may be achieved through generating efficiencies in the financial reporting process from implementing data analytics enablers to support the process.

Category	Assumption	Description
Benefits		
Process efficiencies	666 to 1,110 hours per annum Translates to: $40,500 - $67,500 effective cost savings per annum	► Overall, the financial reporting process takes over 5 months with significant investment of time and effort across the City's finance team and business divisions. ► Focusing on the reporting process for the finance team, the City estimated total 2019 hours for the entire reporting process to be in excess of 2,200 hours. ► A significant proportion of effort is focused on year-end reconciliations, adjustments, data processing and validation. The City estimates that up to 30% to 50% of the time and effort in the financial reporting process could be an opportunity for data analytics strategy. ► Assuming a one-for-one translation, enhanced data governance, analytics and automation, could generate approximately 30 to 50% of efficiencies, equating to a range of 666 to 1,110 hours per annum. ► This is expected to be time diverted from manual effort to increased analytical review. This excludes any additional time required to complete the StatsCan report, which is a new output in the forthcoming financial year.
External support	$5,000 per annum	► A small reduction in professional fees has also been identified. Each year the Finance Division hires a external resources (a CaseWare specialist) to support the financial reporting process.

Pilot case: financial reporting process

Wider benefits of data analytics enablers are anticipated from other Finance Division initiatives, such as the "1% challenge", through improvements to data quality, deeper insights and more frequent reporting and performance monitoring.

Category	Assumption	Description
Benefits		
Expenditure reductions	0.2% to 0.5% savings of total City spend of c$600million per annum Estimated annual benefit of $1.2million to $3.0million per annum	► The provision of enhanced data analytics capability can potentially generate incremental reductions of 0.2% to 0.5% on total City spend per annum. ► The Finance Division estimates that by redirecting effort from low-value manual to high-value analytical activities during the financial reporting process, financial management improvements could be identified. ► For example, by enabling finance personnel to devote increased hours to performance monitoring and decision-making, positive contributions could be made to identifying cost savings. ► In addition, the provision of new tools and availability of better quality information coming from the systems ► For example, the Finance Division operates a "cost challenge" as part of the budgeting process annually. The objective is identify 1% costs savings on total City annual expenditures of $600 million. ► Currently this number is not fully achieved. Challenges exist with regard to availability of complete information, limited time for personnel to review and monitor performance versus budget. ► It is anticipated that with increased reporting frequency, better quality data and faster analytical capability, a range of 0.2% to 0.5% of incremental savings could be achieved. ► Many of the tools and processes, e.g. data governance, once embedded, are expected to be made widely available beyond the financial reporting team and therefore the Finance Division expects the investment in that process to reap benefit from other processes like the "1% challenge".

Note: These numbers are estimates based on a percentage of the City's total operating budget and not from a zero cost or calculated return on investment basis.

Pilot case: financial reporting process

Estimated implementation costs vary depending on the extent of capability considered.

Category	Assumption	Description
Estimated implementation costs		
Specialized personnel & training	$50,000 - $150,000 (ongoing)	► Estimated cost of dedicated FTEs to support and manage the implementation of a data strategy and data governance programme (e.g. data governance manager). ► Specialized resources in the future could compliment existing capability with new analytical skills to improve the depth of reporting and analysis performed, for example data scientists and data engineers. Additional training of existing resources on new analytical tools and techniques will also support future data analytics strategy.
Professional support	$100,000 - $500,000 (one-off cost)	► Estimated costs of external resources to bring objective recommendations on improvement opportunities, subject matter guidance, and extensive experience in data analytics implementation. The use of external resources may reduce the level of backfill required, and expediate the time to realize benefits from the data analytics strategy. ► Costs will increase as external advice is sought to support implementation of data analytics tools and enablers. The costs will rise further if support is sought for systems implementation advice and project management.
Technology enablers	$125,000 - $200,000 (ongoing) $600,000 (one-off implementation cost)	► The technology enabler costs are subject to significant fluctuations based on the vendors selected for the respective initiatives, and the scope of the project. In addition, work should be undertaken in collaboration with IT to validate the requirements and timelines involved. For the pilot programme described, the following technologies have been identified as possible process enhancement opportunities : ► System enhancement – the costs associated with system enhancement can range significantly depending on multiple factors such as number of users, servers, data volumes, integration requirements, etc. Based on market assessment, an indicative cost of $600,000 has been included, with recurring $75,000 annual fee. ► Process automation costs – the cost drivers for this item are the RPA vendor and the number of licenses required. The number of licenses required will depend on the number of processes selected for automation, and the complexity of each process, which impacts the capacity of the software. Market analysis suggests average expenditure of $25,000 per licence per annum, therefore assuming five licences the estimated cost is $100,000 per annum. Open source programming languages, such as R and Python are available for free, could also be used to develop automation however would require specialist coding skills sourced through recruitment or professional support. Costs could be lower if RPA is bundled as part of current or future solutions (e.g. Concur, S/4HANA). ► Self-service tools – a data analytics and/or data visualization tool will enhance the quality of reporting within the Finance Division, and integrate operationally with SAP. $25,000 has been included as an initial estimate of the technology costs, inclusive of estimated user training expenditure required to deliver immediate benefits and uptake. ► Another option is to seek add-ons to existing technology, such as CaseWare and SAP. Additional analysis could be performed to identify upgrades or functionality to tools in-use across the City.

Pilot case: financial reporting process

Additional benefits could be indirectly available across other finance processes from data analytics tools and enhanced data governance.

Improved service delivery

- Immediate impact on the quality of other financing processes, such as budgeting, WIP analysis.
- Centralized data and automation will help reduce the processing time of key activities, allowing information to be reported faster without sacrificing quality or accuracy of information – with the potential to move towards a month-end reporting process.
- Establishment of governance policies and controls will reduce the risk of non-compliance, data integrity issues and enhance visibility.

Improved transparency and quality of information

- Increased transparency over financial results and drivers, including overhead & cost allocation, improving decision-making capabilities.
- Will enhance visibility and timing of business issues, that can support decision making, e.g. working capital and cash management practices that can help free up cash

Reduced time and involvement in producing deliverables

- Initiatives to redesign and/or automate key finance processes include a focus on reducing the time and effort to the business in completing and/or providing input to reporting, business cases, cash management, etc.

Pilot case: financial reporting process

Additional benefits could be indirectly available across other finance processes from data analytics tools and enhanced data governance.

Improved value-add to and from the business units

- Improved business analysis supported by enhanced reporting and forecasting capabilities
- Focused service and demand management
- Increased enterprise-wide decision support

Enhanced decision support

- Business support focused on provided value-add business insight, and forward-looking information
- Implementation of tools to enable self-service capabilities
- Increased transparency of information across the various divisions, improving relationships and trust in the finance team

Stronger control environment

- Improved governance framework and control environment with clear owners of data and measures of quality
- Reduction in errors and risks

Management reports are focused on key drivers of business performance

- Key performance indicators are rationalized to only include items relevant to the business
- Reduced complexity and duplication of information
- Establishment of materiality thresholds will improve the timeliness of reporting without sacrificing accuracy or quality of data presented

6. Appendices

Content

Appendix I – Abbreviations

Appendix I: Abbreviations

Summary of Abbreviations		
#	Abbreviation	Meaning
1	AI	Artificial Intelligence
2	CCG	Center Chargeback
3	DA	Data Analytics
4	ERP	Enterprise Resource Planning
5	ETL	Extract Transform Load
6	FP&A	Financial Planning & Analysis
7	FTE	Full Time Equivalent
8	NLP	Natural Language Processing

Summary of Abbreviations		
#	Abbreviation	Meaning
9	OCR	Optical Character Recognition
10	PCUR	P-Current (Current Period)
11	PO	Purchase Order
12	RPA	Robotic Process Automation
13	SaaS	Software as a Service
14	SAP	Systems, Applications & Product
15	TAT	Turn around Time
16	WIP	Work in Progress

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