GEESE

Global Environment for the Economic Statistics Ecosystem

Delivering insight through data for a better Canada

CONTENTS

I. INTRODUCTION

- ***Global Environment for the Economic Statistics Ecosystem*** (GEESE)
  - A long-term project which will trigger the review, standardization, and optimization of all the information and operating models used in the compilation of the Canadian System of Macroeconomic Accounts (CSMA)
- The new modern environment will be:
  - Used for the compilation of ALL macroeconomic statistics at Statistics Canada
  - Developed to offer modular IT architecture with flexibility, scalability, and traceability
- We know we're not the first organization to pursue this type of project, we welcome any advice from other organizations

Flexibility

- new (big) data sources and technologies can be integrated easily
- analysts can develop their own advanced tools, techniques, and models
- our agency can respond to the reality of an ever-evolving economy
- our agency can serve the existing and evolving needs of our data users

Scalability

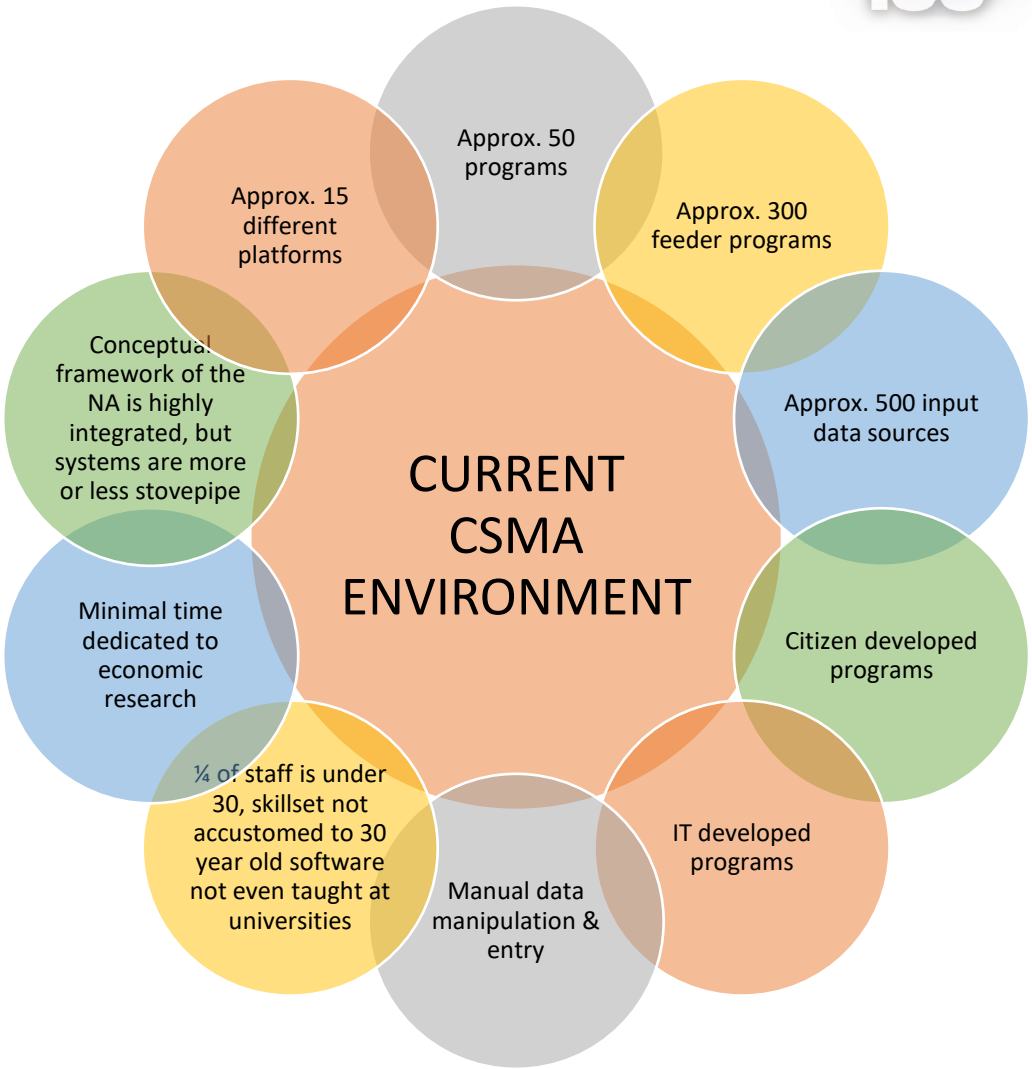
- leverage the latest tools and expertise available today, and apply them consistently across the CSMA
- sharing efficiencies gained across all analytical teams

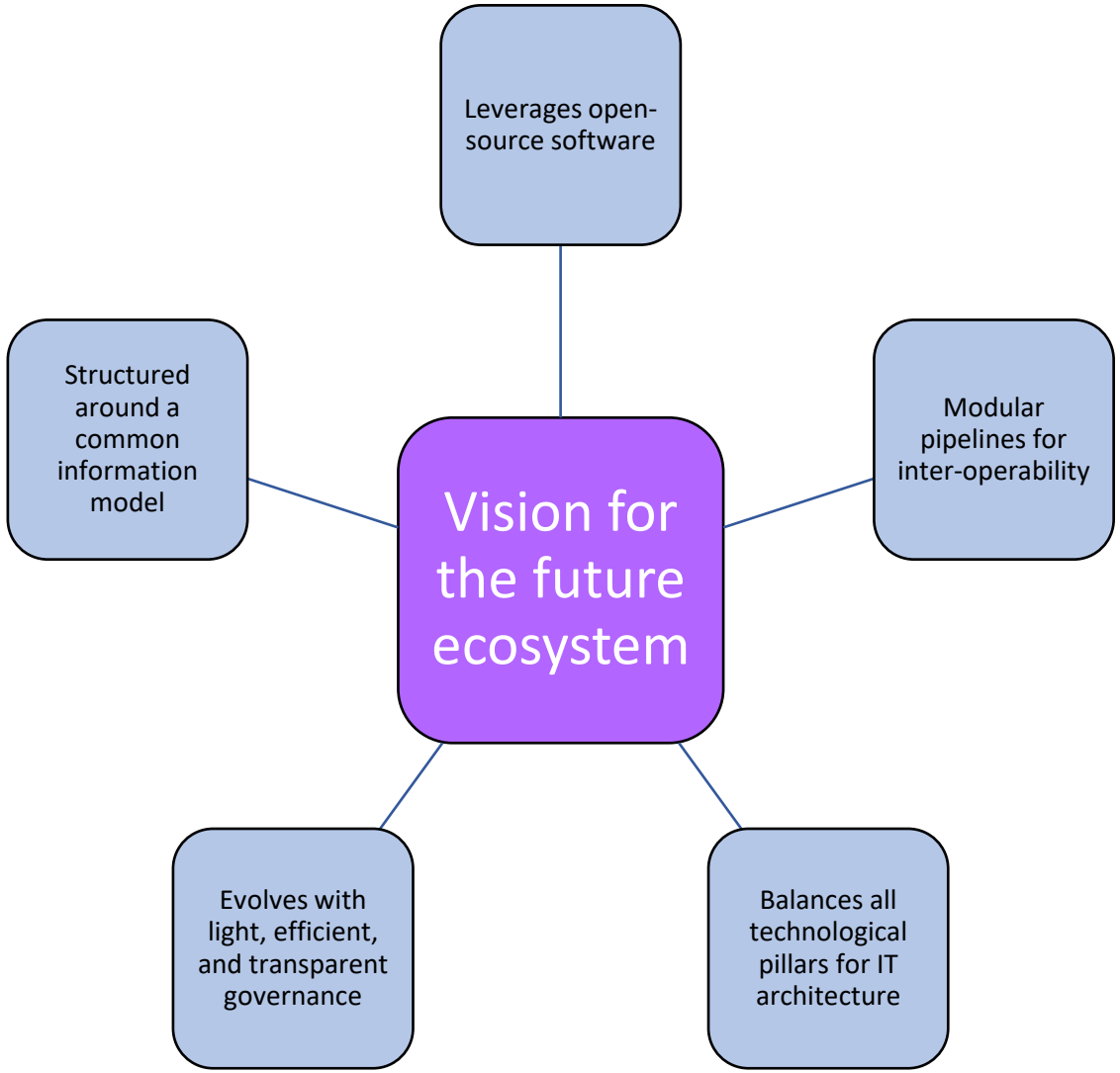
Traceability

- common model for tracking processes and adjustments
- co-ordinated process flows throughout the CSMA

II. MOTIVATION, VISION, GOALS

- Our agency has operated in a way that has allowed our analysts to respond quickly to emerging data requirements in the past
- Current processes, while functional, are not built upon any common coding or information model standard
- This environment is approaching a critical mass of systems that do not speak to one another easily or efficiently



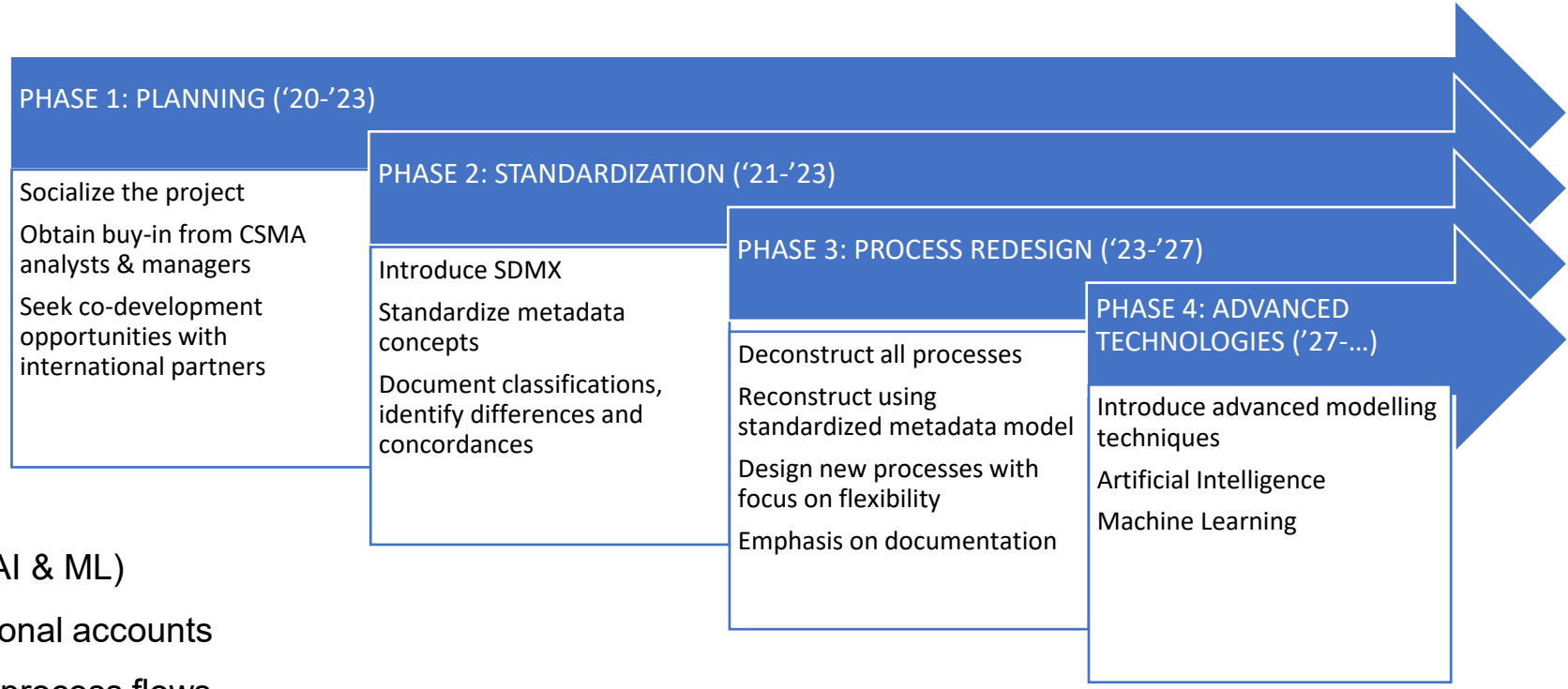

Vision for the future ecosystem
Leverages open-source software
Structured around a common information model
Modular pipelines for inter-operability
Evolves with light, efficient, and transparent governance
Balances all technological pillars for IT architecture


Goals for the GEESE project
CSMA analysts can integrate new tools quickly and easily
A more rewarding work environment to attract and retain a talented workforce
CSMA analysts can build new technologies that can be shared with internal and external partners
Analysts can re-focus on understanding emerging trends and contextual factors
Analysts can move through different areas of the accounts
A reduction of the learning curve that faces all new employees

III. PROJECT COMPONENTS

Short and medium term deliverables:

- Consistent metadata model for the CSMA and its feeding processes (SDMX)
- Complete review of all CSMA data production process flows
- Increased automation of common tasks & processes



Long term deliverables:

- A ramp-up in usage of advanced modelling (AI & ML)
  - Real-time estimation of a full set of national accounts
  - Integration of big data sets into regular process flows
  - Increased options for imputing missing data

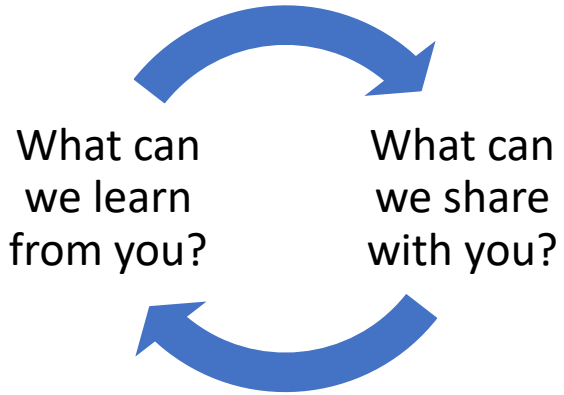
III. PROJECT COMPONENTS

GOVERNANCE	• Different components of GEESE will require different levels of governance • There's a need to establish guard-rails for the citizen-development model • Will help with transparency and traceability • Will include processes to address strategic issues • We're eager to leverage opportunities to work with and learn from other organizations in this area
SDMX	• Recently adopted as an agency-wide standard, so CSMA won't be the only ones using it in our organization • More streamlined processes for data ingestion, and for data dissemination • Ability to increase the degree of automation for data submissions to organizations such as IMF & OECD • Easier to delineate how our data outputs align with international standards • Easier to include new recommendations as manuals are revised

IV. TECHNOLOGICAL APPROACH

STANDARDIZED, METDATA-DRIVEN SYSTEMS	FLEXIBILITY/ ADAPTABILITY/ ALTERABILITY	CITIZEN (CO) DEVELOPMENT	RE-USABILITY & OPEN-SOURCE	TRACEABILITY	RELIABILITY	FUTURE PROOF
SDMX	Modular pipelines	CSMA compilers have access to all code	Standardized program layouts	Process documentation	Systems must work 100% of the time	Adapt to future technologies and standards
Technology agnostic	Targeted updates	CSMA analysts and IT can collaborate together on code	Code can be shared and understood easily	Trace inputs, outputs, automatic and manual adjustments	Touchpoints throughout the pipelines	SDMX 3.0, SNA, BPM, GFS manual updates
			Code bank			

V. CONCLUSION



- Statistics Canada is embarking on an ambitious modernization project
- We are eager to work with international partners
- Our contribution in return will be to review current tools and resources, learn where there may be gaps, and target our research and development to filling these gaps
- We are looking forward to embarking on this journey together toward advancing the global effort for the creation of modern macroeconomic measures!

Thank you / Merci!

Questions or comments? Please reach out to kathryn.young@canada.ca