

Reimagine

To rethink something familiar
and approach it in a new way

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What should public money make possible?

Thenzie Stewart | 97th Annual Conference
Durban ICC 5–8 October 2026

Digital public finance masterclass

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Digital Innovation and Data-Driven Decision-Making in Public Finance

The future is digital. Are you ready?

Reimagining Public Finance Leadership for a Changing South Africa

Main Presenter Thenzie Stewart (CSIR)
Facilitated by Katlego Masemola (Orion Cyber)

Panel members
Xolile Mdluli (National Treasury)
Yamkela Mehlomakulu (Eastern Cape Provincial Treasury)
Koketso Moeng (Ntiyiso Consulting)

Four pillars. One public purpose.

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01 **Data analytics**

Plan with evidence. Test assumptions. Act on risk.

02 **Digital transformation**

Connect finance, contracts, assets and delivery.

03 **AI & automation**

Assist decisions under clear controls.

04 **Transparency & accountability**

Publish results. Preserve evidence. Follow through.

One public purpose: dependable services for people

Public finance and systems: the journey

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1976

Exclusion

Central computing alongside paper; computerised Defence pay

1994

Democratic mandate

FMS, BAS, PERSAL and LOGIS; phased implementation

Today

Delivery responsibility

Connected records, analytics and governed AI

Future

Public trust

Evidence of who benefits and whether services work

Public audit over time

1911

National audit office

Financial stewardship

1996

Constitutional independence

Accountability in democracy

2019

Expanded powers

Material irregularities

Future

AI assurance

Digital evidence with independent judgement

Finance must follow the service

RESOURCES
Money • skills • materials

→

OUTPUTS
Completed, verified work

→

OUTCOMES
Reliable water at home

Economy

Suitable inputs at a fair cost

Efficiency

Resources converted into work

Effectiveness

The service result achieved

Budget + accounting + delivery evidence + lawful authority

Historical foundation: Siswana (2007), chapter 4, pp. 108–110

The delivery gap

R432.4bn

Projected debt-service costs 2026/27

39

Municipalities with clean audits 2024/25

0 of 8

Metros with clean audits 2024/25

Financial discipline and functioning services both matter

Global pressure on public finance

Global public debt as a share of GDP

2025 estimate

Nearly 94%

2029 projection

100%

Energy and trade shocks affect local costs and cash

Estonia’s X-tee combines data exchange with access agreements and logs

South Africa's digital foundations

1	**Shared building blocks**	Digital identity, exchange, payments and services
2	**Supplier information**	Central Supplier Database
3	**Public scrutiny**	Vulekamali and Municipal Money
4	**Governed exchange**	MzansiXchange pilot launched October 2025

Institutional readiness and data quality vary

South Africa: design for the constraints

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01 **Access & infrastructure**

Connectivity • affordability
power • recovery arrangements

02 **Legacy constraints**

Stable cores can coexist with limited interfaces and costly change.

03 **Data & interoperability**

Inconsistent identifiers and definitions can obscure delivery.

04 **People & trust**

Skills • support • security
privacy • assisted access

Design response: resilience + inclusion + controlled exchange

Pillar 1: turn data into a planning decision

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INPUTS → **SCENARIOS** → **DECISION**

Budget • actuals
commitments •
cash
verified progress

Base case
Downside case
Recovery case

Signal + owner
action + date
evidence retained

Update the forecast. Follow the law to change the budget.

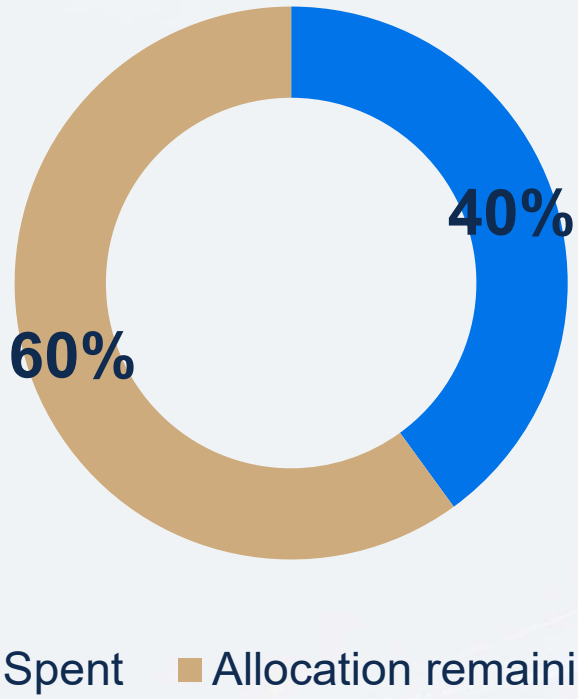
Start with the decision you need to improve.

R40 million spent on water

R40m

R100m capital budget at midyear

What would you need to know before approving the next decision?



Spend share does not measure delivery

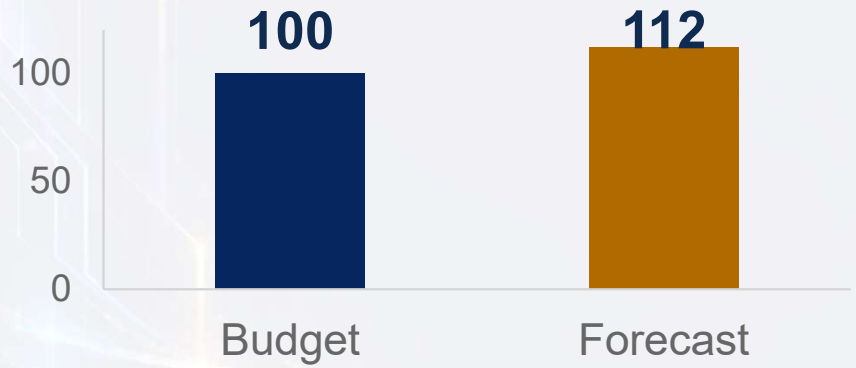
Illustrative municipality

Illustrative water-project dashboard

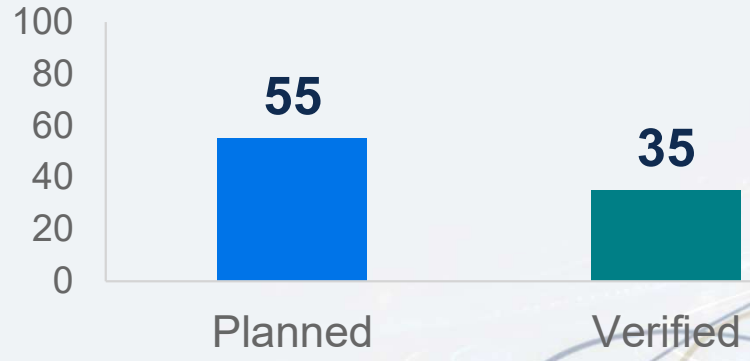
ILLUSTRATIVE ONLY **Midyear water project** **All figures invented**

R100m	R112m	R12m	0 / 2,000
Approved budget	Forecast total cost	Forecast funding gap	Households served

Budget and forecast (R million)



Physical progress (%)



R40m paid + R8m certified unpaid + R64m other work = R112m

20 percentage points behind plan. Commissioning pending.

The decision behind the dashboard

ILLUSTRATIVE ONLY Sources checked before decisions

Issue	Worked interpretation	Accountable response
Funding	R112m forecast − R100m budget = R12m gap	Finance and engineer verify scope and funding options
Quarterly cash	R18m payments − R12m available = R6m gap	Finance plans cash and escalates timing
Delivery	35% verified vs 55% planned = 20 pp lag	Project manager and engineer confirm recovery plan

R18m quarterly need = R8m unpaid + R10m new work

Human approval, source evidence and a dated action record

The digital financial process

01	02	03	04
Requirement	**Procurement**	**Delivery**	**Payment**
Service need and budget	Approved sourcing and contract	Verified receipt or work	Matched evidence and authority

Supported ERP processes, controlled interfaces and owned master data

Differentiate where it creates value. Standardise where it does not.

Systems already in use. Capabilities to add.

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IN USE / ESTABLISHED FOUNDATIONS

National / provincial
BAS • PERSAL • LOGIS[1]
Municipal systems
Local ERP • mSCOA[2]
Shared / public information
CSD • eTender
Vulekamali • Municipal Money

CAPABILITIES TO ADD / PROPOSALS

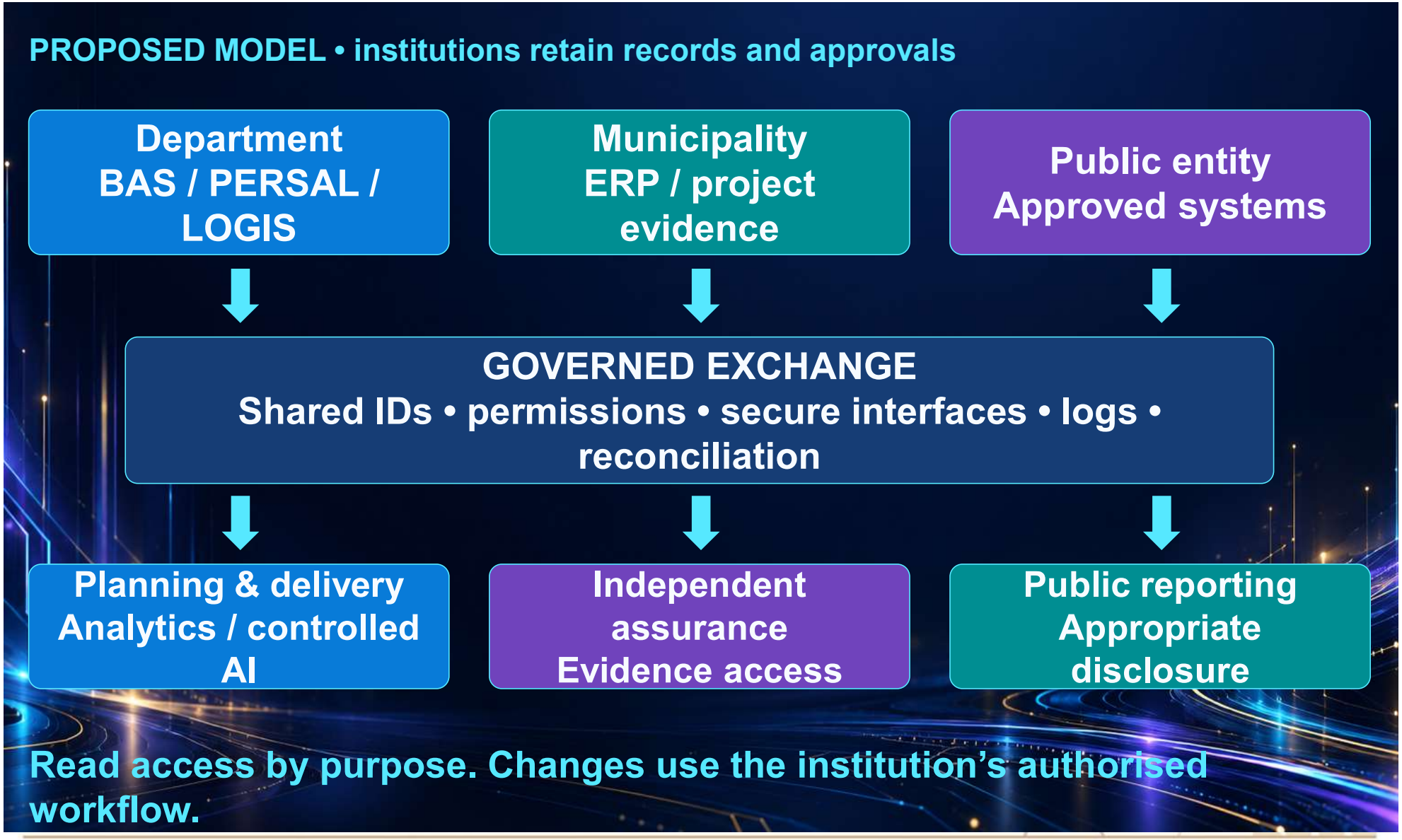
Reconciled analytics + GIS
Controlled digital workflows
AI assistance with evidence
Secure data exchange
Identity + payment services[3]

CONNECT THROUGH GOVERNED INTERFACES + SHARED DEFINITIONS

[1] Where implemented. [2] mSCOA is a classification framework, not software.
[3] Roadmap initiatives; MzansiXchange was launched as a pilot in October 2025.

Connect evidence. Preserve authority.

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Modernise without interrupting the service

STABILISE	CONNECT	MODERNISE	PROTECT
Keep critical services running. Support • security • recovery	Use controlled interfaces. Reconcile records and totals.	Phase changes by function. Test • migrate • compare.	Approval gates • rollback Monitor service continuity.

Keep what is reliable. Replace what the evidence shows is unsustainable.

AI capabilities and authority

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01 Rules automation
Matches and routes defined transactions

02 Predictive models
Estimates collections or flags patterns

03 Generative AI
Drafts explanations using approved evidence

04 AI agents
Use tools to carry out permitted steps



Authority, testing and oversight increase as the system can act

SARS and automation at scale

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5.8 million

Taxpayers received auto assessments in 2025

01 Third-party source information

02 Digital channels and correction routes

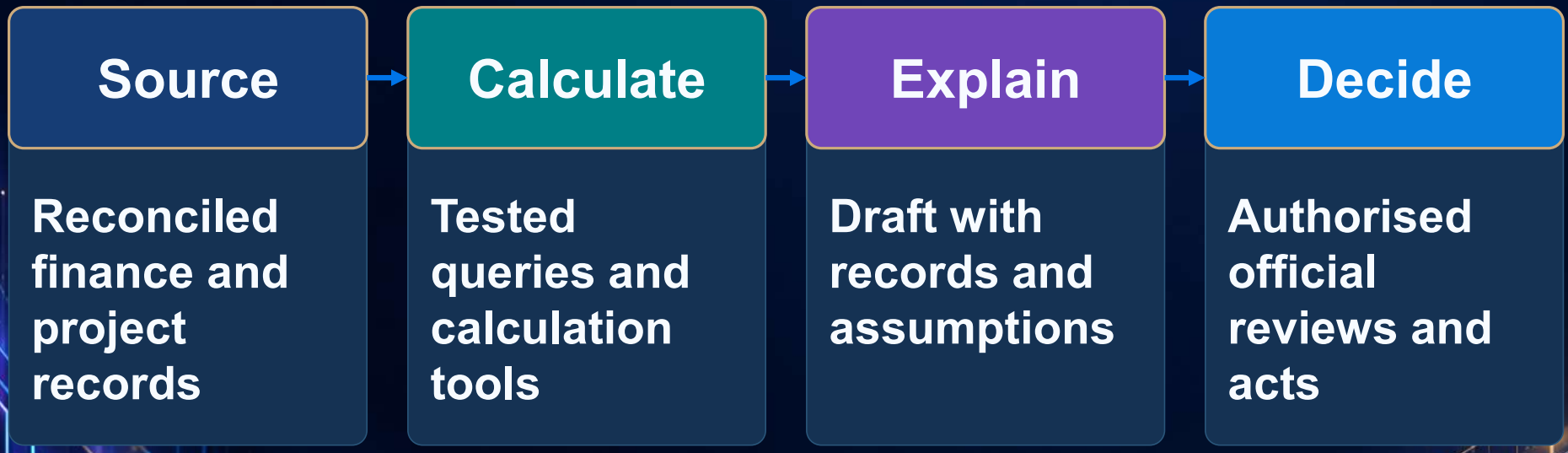
03 AI and machine learning for risk management

The transferable lesson is the whole operating model

The AI finance assistant

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Why is this project forecast to overspend?



Approved evidence retained with every explanation

Proposed use case. Read access first. Missing evidence stays visible.

AI agents and supplier payments

An invoice includes a changed bank account

Agent prepares review → **Official verifies and approves**

Flag the change

Gather approved verification records

Prepare a review task

Independent trusted channel
Institutional approval limits
Logged decision and action

Unverified details stop the payment workflow

AI risk and financial controls

Risk	Finance consequence	Control to test
Invented explanation	Wrong allocation or report	Source checks and tested calculations
Biased or stale data	Unfair treatment or poor forecast	Data checks, appeals and error review
Leakage or injected instructions	Exposed data or unauthorised action	Restricted access and tool boundaries
Excessive agent authority	Duplicate or improper payment	Separate approval and safe retries
Model or supplier change	Control failure or service interruption	Revalidation, recovery and exit plan

Governance before AI deployment

Accountable sponsor	Purpose, benefits and permitted use
Finance and SCM	Financial controls, approval limits and vendor terms
CIO and data owners	Access, security, data quality and recovery
Risk and legal	Impact assessment and applicable duties
Independent assurance	Internal audit review and audit committee oversight

PFMA and MFMA responsibilities remain with accountable officials

POPIA section 71 applies to certain solely automated decisions with legal or substantial effects

Audit with digital evidence

Established audit work	Additional digital capability
Financial statements and compliance	More frequent analysis of transaction populations
Samples and corroborating evidence	Targeted review of exceptions and source records
IT controls and system reliability	Interfaces, access logs and automated controls
Delivery and performance evidence	Financial records linked to physical verification

Management monitors continuously. Auditors retain independent judgement.

Assurance over the AI system

1. Can we reconstruct the evidence used?
2. Do permissions and approvals constrain actions?
3. Do tests cover errors, bias and hostile inputs?
4. Can we detect changes and stop safely?

Auditing with AI and auditing AI are different tasks

Transparency through to service



Government tools available today

Decision	Government platform	Access
Cash and financial trends	Municipal Money and Finance Data API	Public
Budget priorities	Vulekamali	Public
Procurement scrutiny	eTender and procurement dashboards	Public
Supplier information	Central Supplier Database	Account and role based

Check coverage, reporting period and completeness before comparing

A tool framework for the next decision



The first 90 days

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Days 1–30	Days 31–60	Days 61–90
One decision	**One controlled pilot**	**Evidence review**
Baseline, owner and source records	Permissions, tests and staff preparation	Accuracy, cost, workload and response

Scale when measured benefits justify the cost and risk

The future is digital. Are you ready?

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Which decision will you improve next?

1. **Shared data**
   What standards make financial information usable?
2. **Implementation**
   What capability makes provincial delivery work?
3. **Public value**
   What evidence shows that digital investment succeeds?
4. **Security and authority**
   How do controls constrain connected systems and AI?



Which decision will you improve first?

Thank you

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Name the owner.
Identify the evidence.
Explain the public benefit.

SAQA Recognised Professional Body