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From Data-Driven to Data-Informed: Rethinking Service Development for African Research Data Infrastructures

The term “Data-driven” is pervasive in an age where data has been presented as the new gold of the fourth industrial revolution. It characterizes much of the discourse in research and development environments and the delivery of digital services to the communities we serve. The objective is to make better decisions through the systematic use of data, analytics, and automation. In the African context, research data infrastructure operates in uneven data environments, diverse institutional contexts with evolving governance requirements. Under these conditions, relying solely on metrics without pairing them with the local context, operational challenges, and policy can limit the effectiveness of our initiatives.

The next step from being data-driven is being data-informed, where the former does not replace or reject the latter. The utility of data is optimized when paired alongside human expertise, institutional context and explicit policies to produce decisions that are evidence-based and contextually grounded.

The talk will share lessons from an ongoing shift in paradigm towards a data-informed approach to services development within the Service Development and Incubation (SDI) team of the South African National Research Network (SANReN).

The SANReN Connect Proof of Concept is the context which we draw from. The presentation will describe the journey of how automation, observability and policy as code are being introduced to encode governance and security requirements for cloud-native service development environments.

The early practices and design decisions empowering data-informed service delivery will be described, including combining operational telemetry with institutional feedback, contextualizing metrics and the application of machine-readable policy constraints to govern automated services. The aim is to advocate for this approach as a means of building greater resilience in African research data infrastructures while delivering trustworthy digital services which prioritize data sovereignty.

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