Adapting the Quality of Experience Framework for Audio Archive Evaluation

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# Insight

Centre for Data Analytics

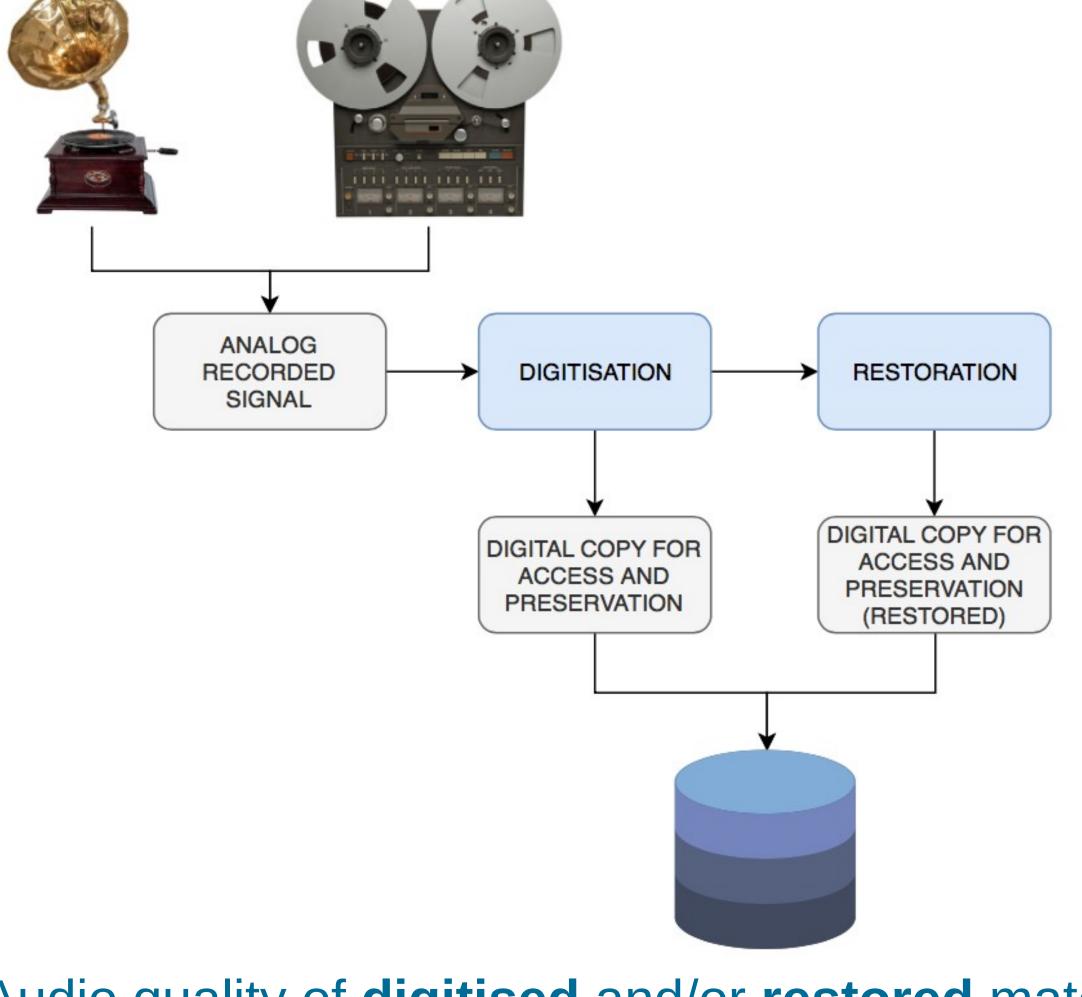
#### Introduction

• What happens to the musical works of the past?

# **QoE Archive Lifecycle**







	QOE (D)	QOE (D+R)	QoE (D+R+ $C$ )
A state of the	DIGITISATION	→ RESTORATION Optional	→ CONSUMPTION
STAKEHOLDERS	Archivists Broadcasters Record Industry	Archivists Broadcasters Record Industry DSP Researchers	Researchers Content Creators Education Sector Public Listeners
	Digitisation Pipeline Signal Properties Playback Device	SYSTEM Restoration Methods Carrier HUMAN	Compression Artifacts Transmission Artifacts
INFLUENCE FACTORS	Goal: preservation	Goal: restoration assessment Expertise <b>CONTENT</b>	Goal: access Unconscious sound judgement Age, mood, gender
		Restoring Speech, Music or Sounds	Accessing to Speech, Music or Sounds
		CONTEXT	Background Environment

• Audio quality of **digitised** and/or **restored** material is poorly investigated implying low user satisfaction and loss of fidelity.

# Objective

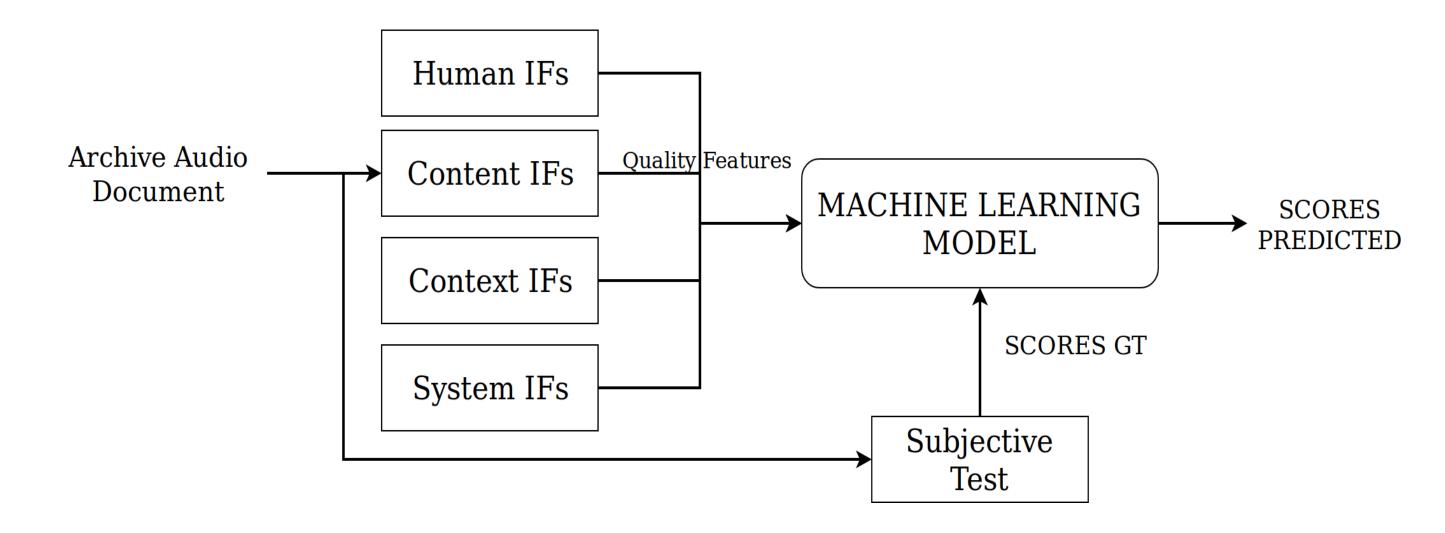
In this paper we discuss reasons how the **Quality of Experience (QoE)** framework can be adapted for assessing perceived audio quality in archive material.

### Motivations

- *How quality is assessed?* Most organizations rely on personal and **individual judgements** when evaluating digitized/restored archive documents.
- Can we do better? Computational models such as audio quality metrics could be used to speed up the process and to guarantee accuracy. However, computational models derived from different applications cannot be adapted in this context for a variety of reasons:

# **QoE Evaluation**

DIGITISATION	RESTORATION	CONSUMPTION
Parametric Models	No Reference Full Reference	No Reference



#### Conclusions

• This paper describes the importance of evaluating quality in digital audio archives and proposes a QoE

Different quality expectations of stakeholders

- A reference signal cannot be defined
- Heterogeneity of audio archives

They were developed for different impairments

#### framework to quality assessment.

 No prior research has applied a QoE framework approach to audio archive quality. We have illustrated that it can be applied to audio archives to identify the stages, stakeholders and models for a QoE centric approach.

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