

Product Placement Platform for Personalised Advertising

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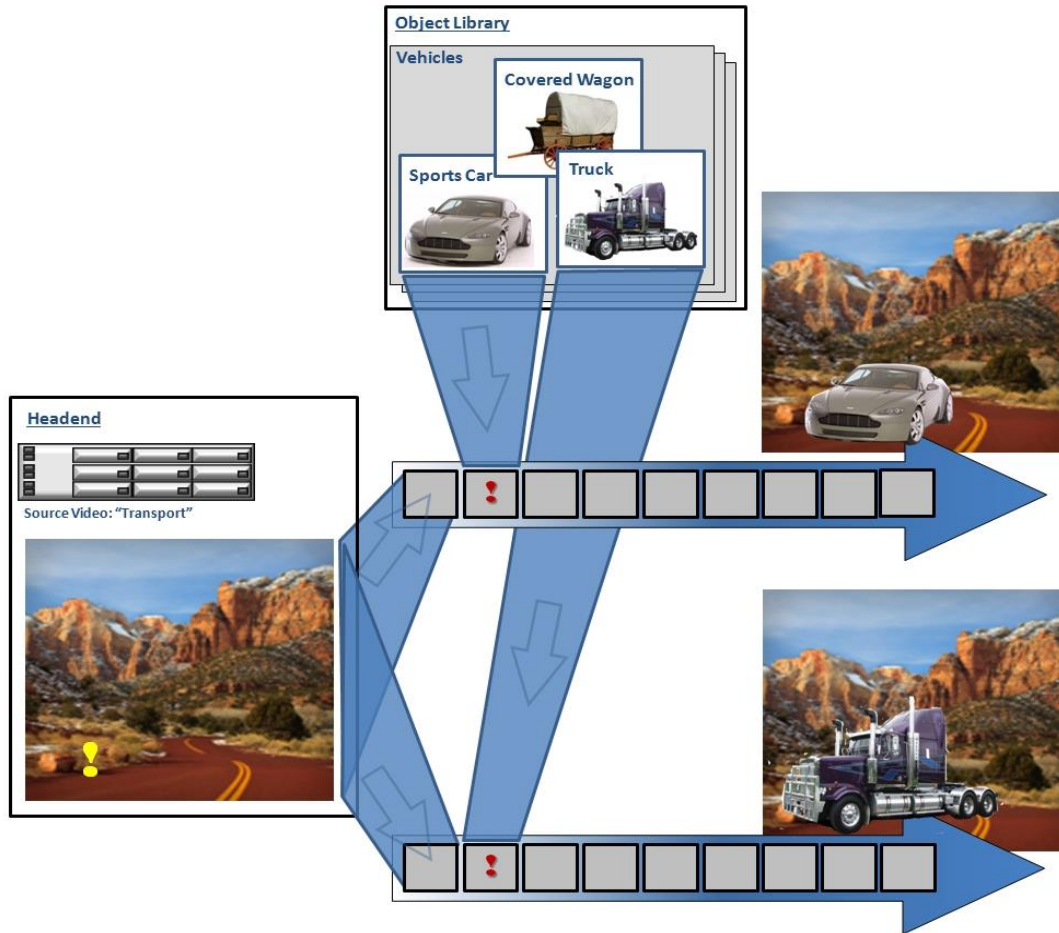
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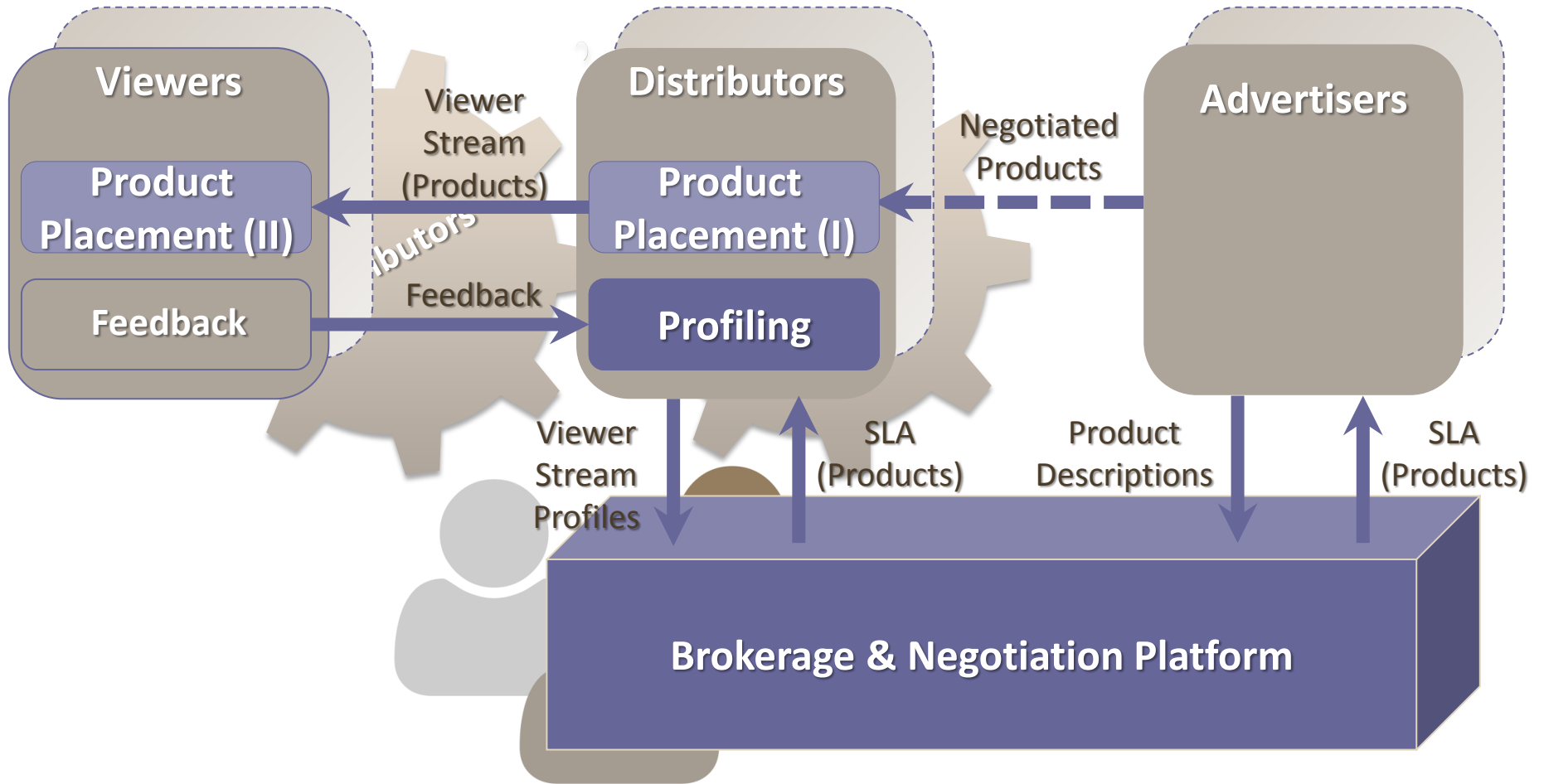
⁽⁴⁾Birmingham City University, UK

1. Context

Personalised Product Placement



Personalised Product Placement | Approach



2. Profiling

Dynamic Viewer Profiling

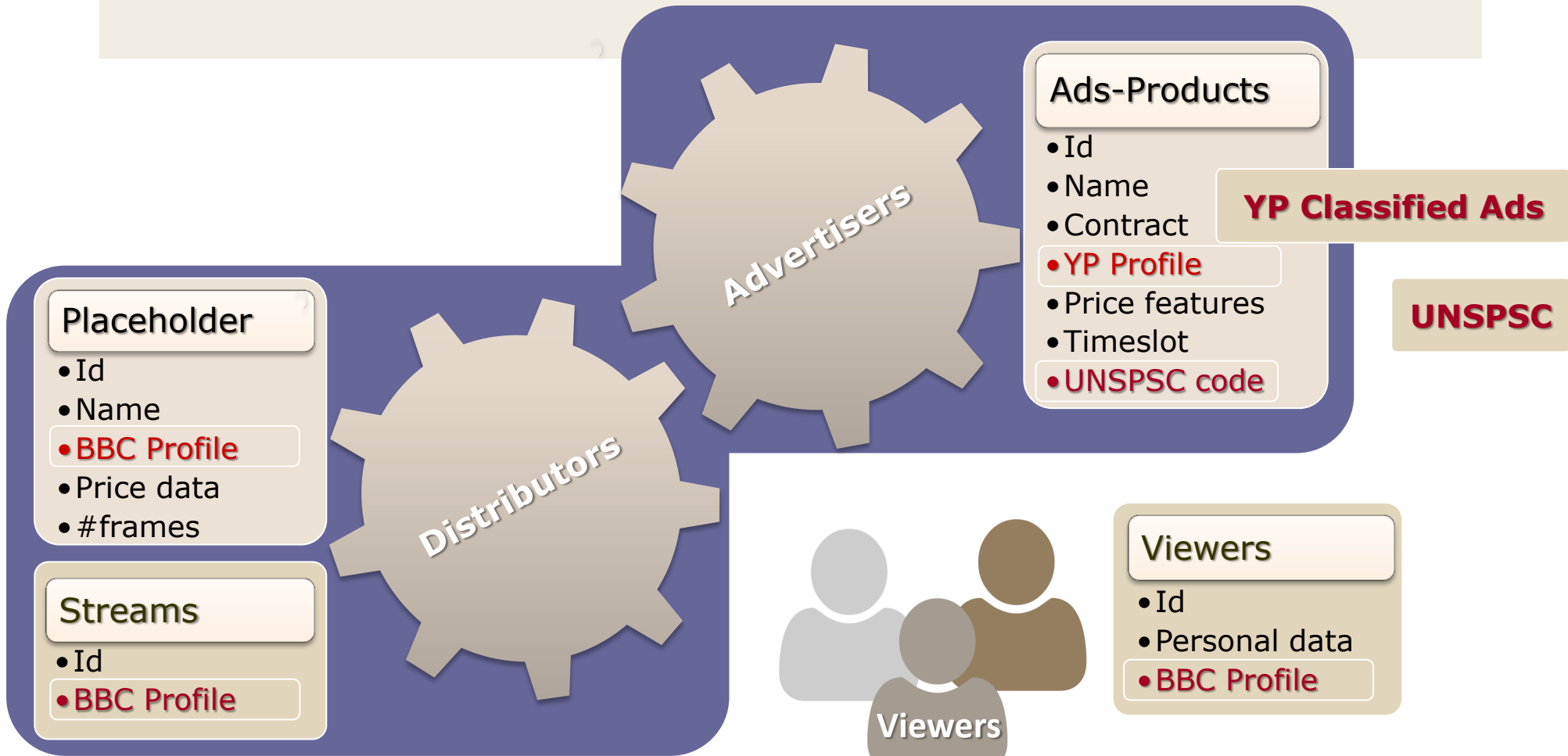
- Stream of viewer events | rated and watched programmes
- Model creation with Singular Value Decomposition | initial dataset
- Model update with stochastic gradient descent function

Implicit feedback positive model | viewer watched programmes

Explicit feedback model | viewer rated programmes

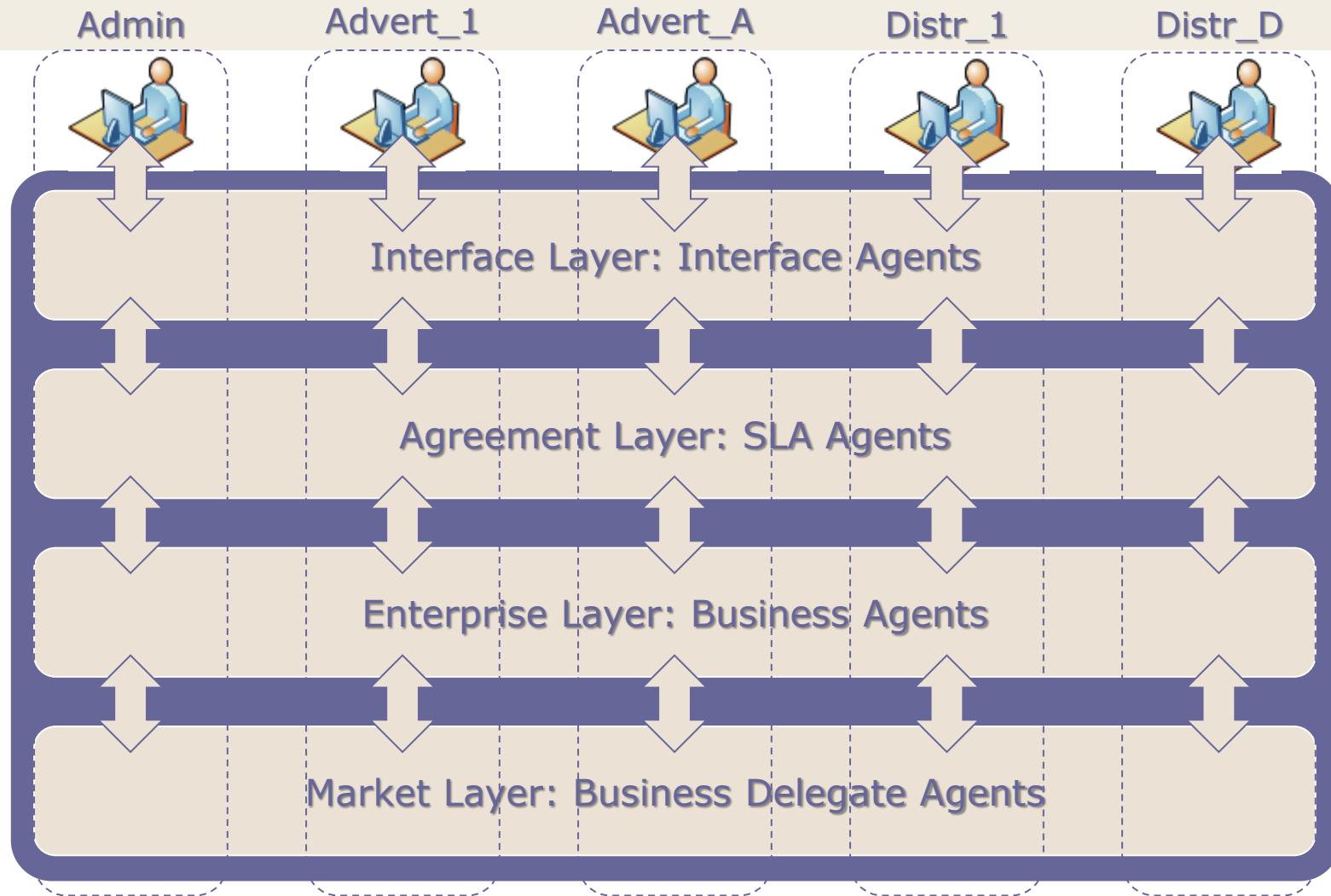
3. B2B Media Brokerage & Negotiation Platform

Domain Knowledge



BBC Programmes Ontology Categories

Layered MAS Architecture



Service Level Agreements (SLA)

bSLA

brokerage SLA | advertiser/distributor business & platform

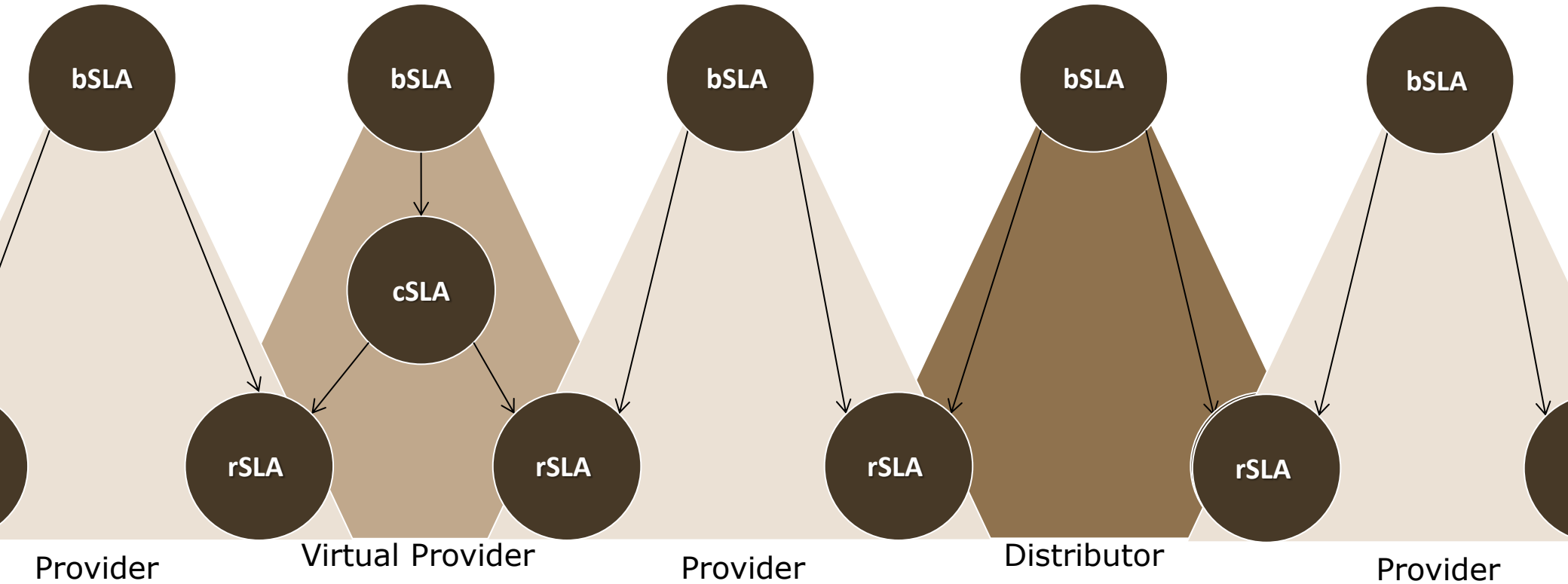
cSLA

coalition SLA | between providers (advertisers)

rSLA

resource SLA | between provider (advertisers) & distributor

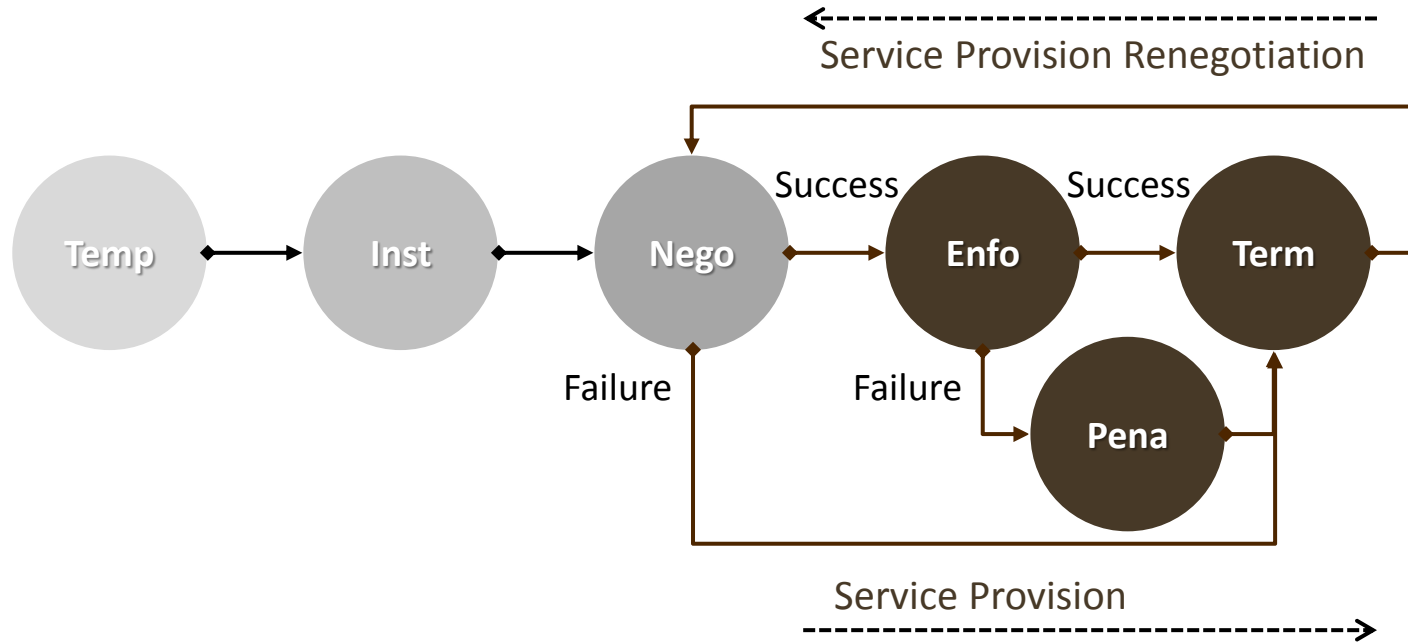
SLA hierarchy



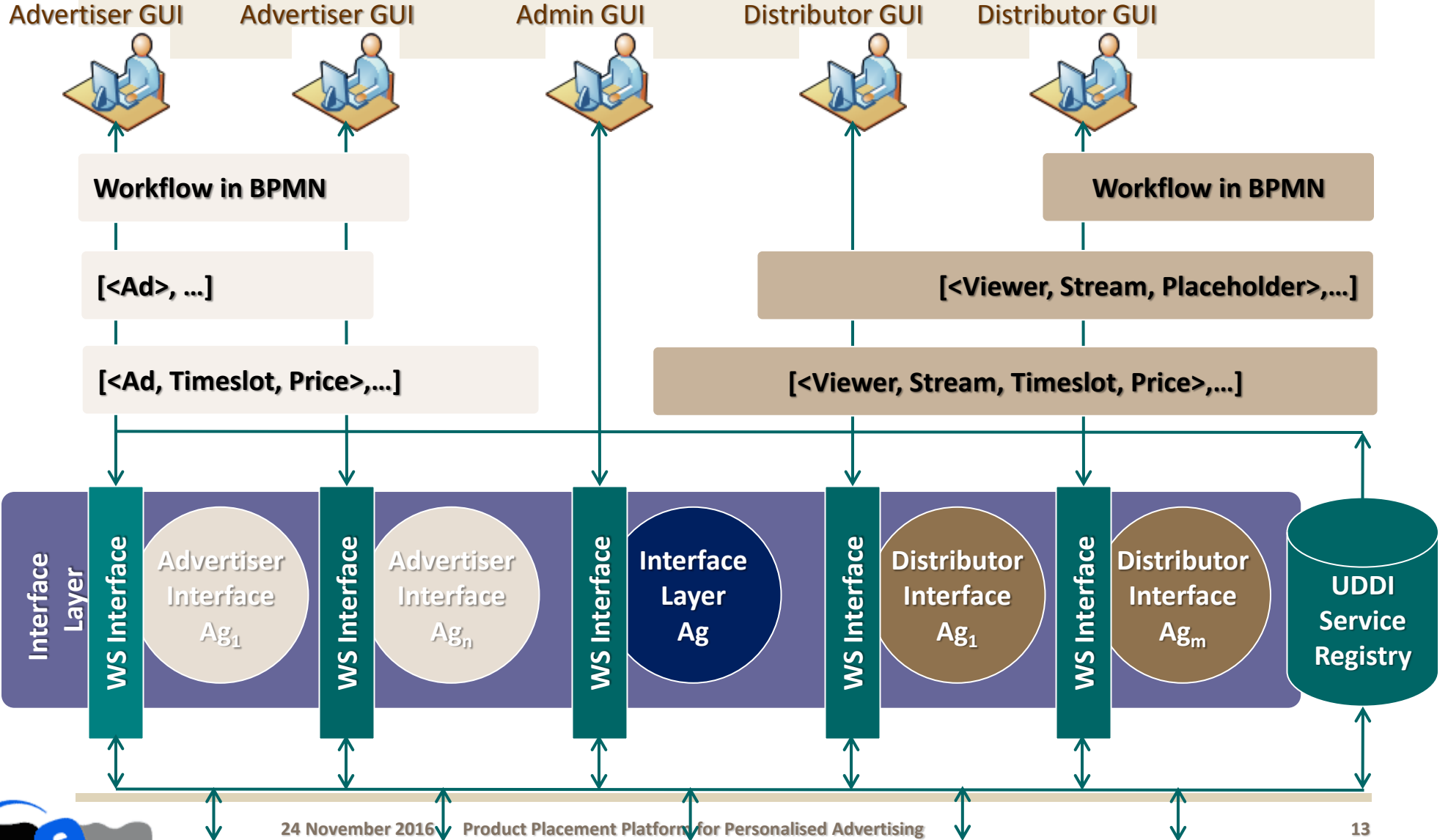
Pay-per-use Business Model

- Established SLA remain latent till the service is provided
- Playout of a product placement involves (at least) three payments:
 - distributor pays the provider the resource price
 - provider pays the platform the accorded brokerage fee
 - distributor pays the platform the negotiated brokerage fee
- SLA violation results in the reimbursement of the accorded price/fee

SLA Life Cycle



Interface Layer



Enterprise Layer | Trust-based Invitation/Acceptance

Distributor

- Identifies personalisation opportunities (upcoming placeholders)
- Determines the placeholder profile (viewer and stream profiles)
- Looks up at the UDDI and invites producers (holding ads on products matching the placeholder profile) for negotiation
- Launches a delegate agent to negotiate the product placement

Provider

- Accepts/rejects the invitation
- Selects the ad with highest similarity (with the placeholder profile)
- Launches a delegate agent (market layer) to negotiate the selected product

Market Layer | Trust-based SLA Negotiation

Negotiation Protocols:

Bargaining | bSLA

FIPA ICNET | cSLA & rSLA

Dimensions:

Price/s

Interval profile vs ad (product) similarity

Number of matching categories between placeholder and ad

4. Conclusions

Conclusions

The platform supports personalised product placement

Businesses

register at the platform

upload the workflow of their agents using BPMN

upload viewer, stream or ad data

download the established rSLA

Brokerage & negotiation services

partner lookup, trust-based invitation/acceptance

trust-based bSLA, cSLA and rSLA negotiation

rSLA (product placement) multidimensional negotiation

Future Challenges

Product creation & description | producers

Product composition and rendering | viewer platform

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