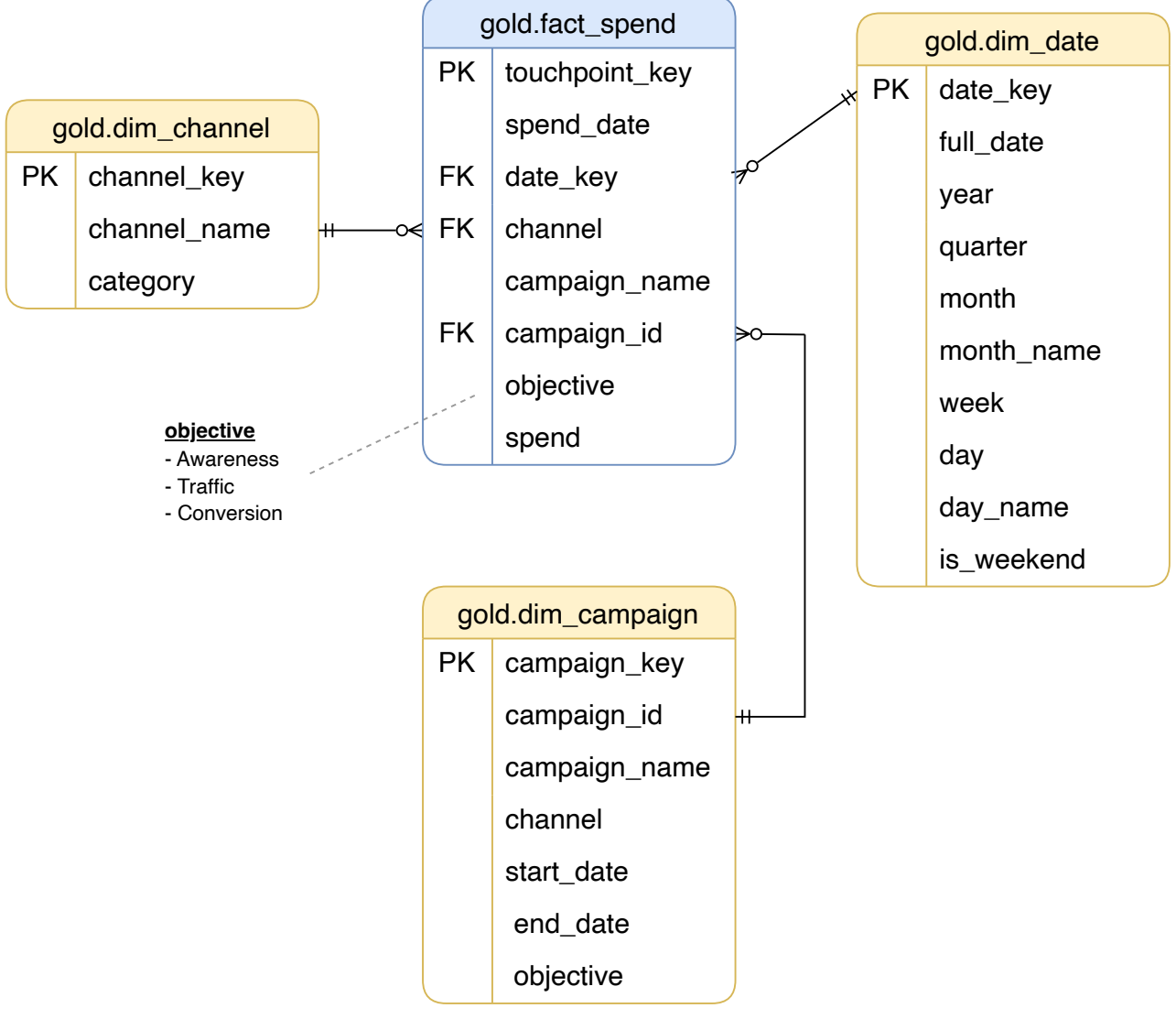


Marketing Data Mart (Star Schema and Fact Constellation)

The Gold layer follows a *star schema* for core marketing analytics (spend, clicks, sessions, touchpoints, purchases), combined with a *fact constellation* for attribution modeling. The analytical fact tables (fact_touchpath, fact_attribution_linear, fact_attribution_last_touch) intentionally reference fact_purchases through the natural key purchase_id to enable multi-touch attribution analysis.



If a classic Kimball star schema is wanted, fact tables would have to be altered to contain surrogate keys user_key (FK), channel_key (FK), campaign_key(FK).

In this design unique primary keys are good for unique dimension rows and BI tool compatibility (Power BI, Tableau).

