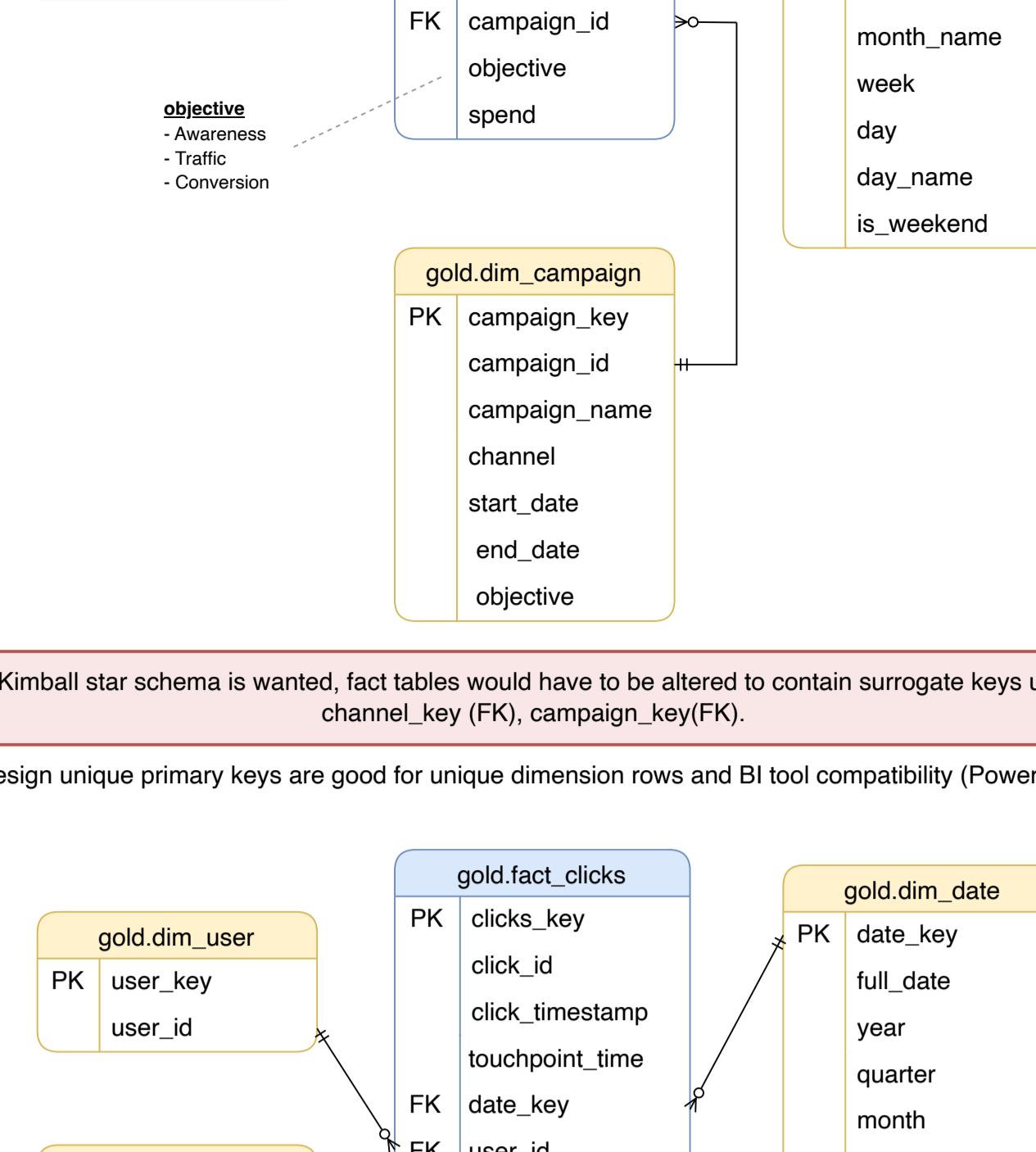


# Marketing Data Mart (Star Schema and Fact Constellation)

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).

