



A Framework for Building Quality of Experience (QoE) Data Mart for Mobile Networks

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1. INTRODUCTION

- Mobile operators aim to enhance profitability, retain their existing customers and attract new ones by offering services with high quality.
- Working on highly competitive market force Mobile Operators to adopt more customer-centric approach and shift the focus from Quality of Service (QoS) approach into Quality of Experience (QoE).
- According to TM Forum, Customer Experience (CE) can be defined as “the result of the sum of observations, perceptions, thoughts and feelings arising from interactions and relationships (direct and indirect) over an interval of time between a customer and their provider(s)”.

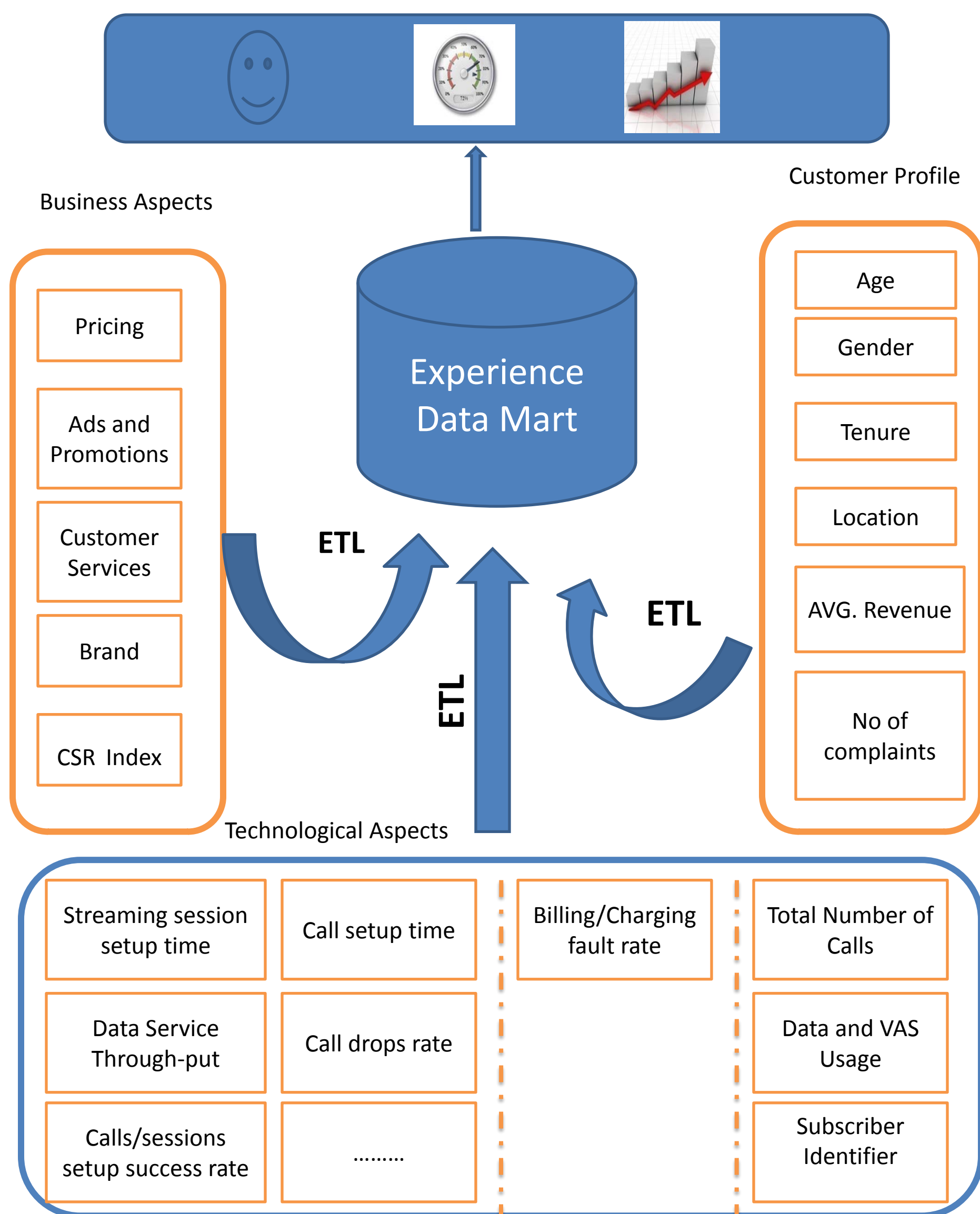
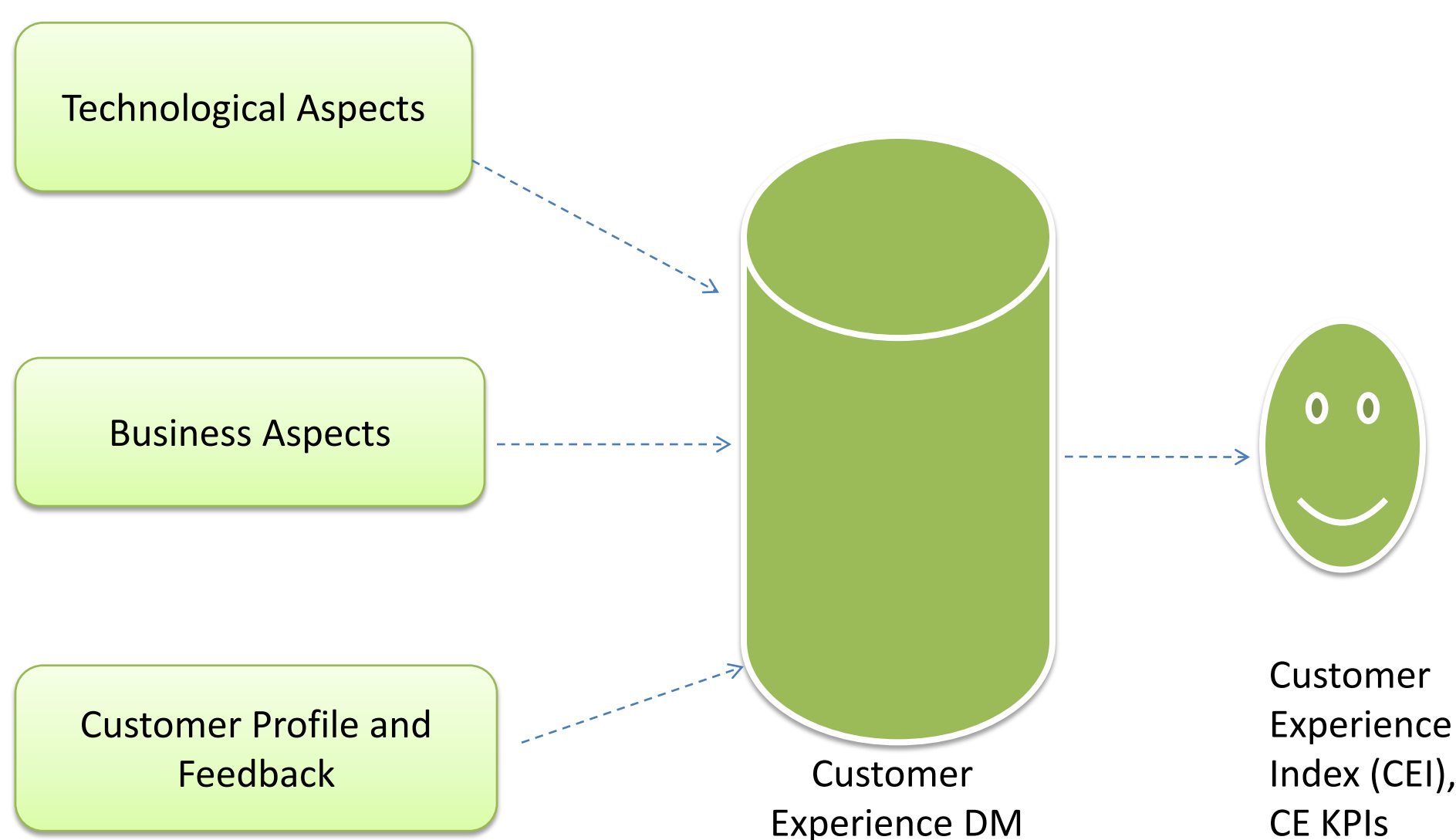
2. OBJECTIVES

- Building a comprehensive conceptual framework for QoE in telecom environment.
- Implement the conceptual framework to measure QoE KPIs and generates the Customer Experience Index (CEI).

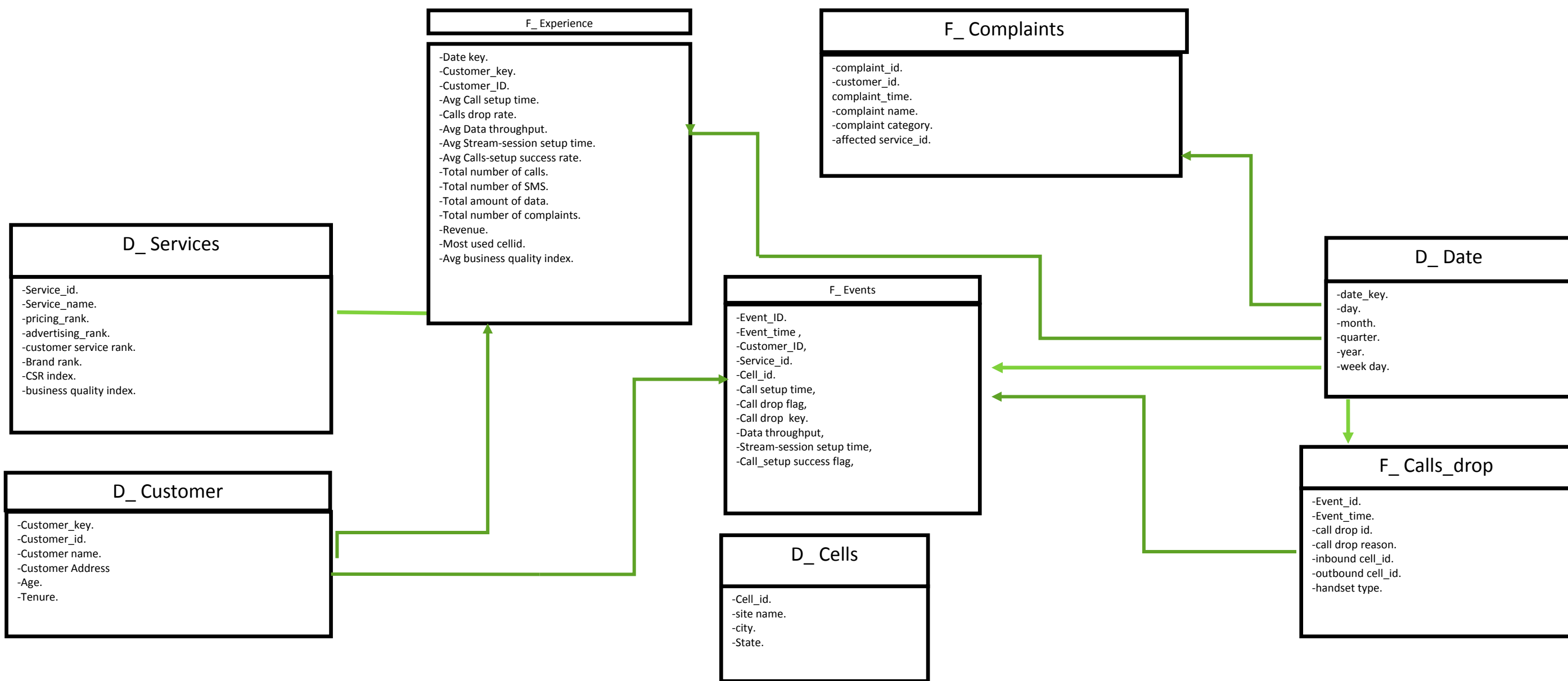
3. CHALLENGES

1. Lack of a standard and comprehensive framework for measuring Customer Experience.
2. Volume, Velocity and Variety (VVV) nature of underlying telecom systems and data (Networks, OSS, BSS,..)
3. Both Objective and Subjective measures should be considered.

4. Conceptual Framework



5. Data Mart



6. DM Characteristics

- F_events is the main fact table in the above DM and its granularity is on the event level.
- F_Experience is the daily summary table for F_events and holding other experience related dimensions keys based on the proposed conceptual framework.
- Some of the dimensions are slowly changing (i.e. D_Service)

8. Discussion and Future Work

- Subjective measure like pricing, branding and customer services' quality can be quantified using customer feedbacks, comparative analysis with competitors and overall environment.
- Data mining models like neural networks and linear regression could be utilized to predict the Customer Experience Index (CEI).

7. Analysis and KPIs

- Based on the developed DM, most of the customer-centric quality related KPIs can be generated.
- The dimensional model facilitate a thorough analysis in order to know the root-cause of poor quality experience as well as coupling between QoE and other customer attributes like Revenue, Age on network, Churn Customer, Location and others.
- Customer Experience Index (CEI) can be calculated as a function of the three main quality aspects (Technological, Business and Customer).

9. References

- [1] ITU-T Report 2007, Definition of Quality of Experience (QoE), Liaison Statement, Ref.: TD 109rev2 (PLEN/12), Jan. 2007.
- [2] D. Geerts et al., "Linking an Integrated Framework with Appropriate Methods for Measuring QoE," 2010 2nd Int'l. Wksp. Quality of Multimedia Experience, 21–23 June 2010.
- [3] K. ur Rehman Laghari et al., "QoE Aware Service Delivery in Distributed Environment," 2011 IEEE Wksp. AINA Conf. Advanced Info. Networking and Apps., 22–25 Mar. 2011.