

VO.I.C.E. First

VO.I.C.E. First = VOice Intelligence for the Customer Experience



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Improving the quality of work and, together, the speed of response to the market, changing the approach itself to the Customer Experience, these are the purposes of the Voice First project.

In order to carry out a profound renewal of the management method, based mainly on digitization and the introduction of AI technologies, which will allow organizational efficiency and timely monitoring of the situation of end users, it was decided to:

- create a computerized management system capable of providing decision-making support to the Customer Care operator:
- evaluate the effectiveness of the proposed solutions with respect to those already presented, carrying out, inter alia, an assessment of the "economic sustainability" of the various hypotheses.

Let's find out which solutions are implemented, the ones on which the work team stands continuing with the developments and results that have so far been achieved in the area of Dashboarding and Conversational and Chat Virtual Agencies.

OR3 Development of innovative Dashboarding solutions for the integration of data from voice and web channels

The Voice First Project involves the development and testing of an AI method for extracting information on textual documents or Topic Modeling. It is an AI technique that automatically extracts the useful information from an extension of heterogeneous data, automatically with an algorithm implemented on the computer, which allows to give values to the data. The information is destructured and is encoded in a particular language and it is necessary to examine the words and associate them with some terms whose semantic content appears equivalent or at least correlated. It is therefore necessary to identify the words, define the topic within which each word will have a different weight and characterize the proportion of topics for each individual topic.

The development phase saw the work team evaluate and test this system in terms of effectiveness by verifying the interpretation of the structure and of the topics presented in the corpus of documents. Therefore, an analysis library for topic modeling was developed and implemented and applied on a given data-set. In summary, within the VO.I.CE. First, the complex relationships were discovered in text transcripts coming from different channels (voice, web, social) using machine learning algorithms such as latent Dirichlet allocation and the behaviors and the opinions expressed in the text data to classify the statements as positive, neutral or negative.

As regards the prediction of the Next Best Action, i.e. the best next action, the analysis concerned

- historical data taken from the CRM for purchases, payments, interactions with the Customer Care, surveys, feedback and participation in any events
- data enrichment
- aggregation of individuals on a static basis (sex, age group, address residence)

But what is the Next Best Account? In order to increase the ease of the agent to meet the needs of the end user it is necessary to develop a solution that includes:

- the sending of specific customized messages
- the use of the right effort based on the sales philosophy
- the choice of the best offer, which best corresponds to the needs
- the promotion of proactive sales actions
- the promotion of customer retention actions
- limiting potentially negative actions

OR4 Conversational and Chat Virtual Agents

Automatic customer assistance usually involves some common problems with frequent recourse to fail-over on human operators and negative «user experience», in the Voice First Project a cobot was defined and designed (a cognitive collaborative robot) to assist telephone agents. The cobot helps identifying the customer's needs and, thanks to a knowledge base built by the analysts for each application domain, assists the human assistant in real time in order to improve the service by obtaining a reduction in time. For this purpose, it collects information, regulations, procedures and historical data, offering suggestions, "Next best account" and ad hoc offers. Through a "knowledge based" approach, an analysis of the conversational flow that passes to a reasoner who reasons on two elements is carried out from an interaction:

- background knowledge, i.e., the customer's procedures and processes
- dynamic knowledge or what the end user exposes during the course of the conversation

Following the integration of the two knowledge, a "reasoning" is defined and applied and the message is sent to the dashboard which shows the actions to be taken in real time.

A knowledge graph of the conversation was therefore built, in fact, what the user says is subjected to chunking and through complex algorithms the sequences of «intent/topics» are transformed into coherent «states of knowledge».

The ontology created has a top level that is based on the concepts that shape the dialogue and it is easily scalable; moreover, a domain ontology and an applicative ontology have been defined.