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Cloud and Natural Language Processing (NLP) to Solve the Problem of Service Continuity

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Abstract : The availability of IT services within organizations has become increasingly important; however, in an interconnected world favoring the distribution and offshoring of organizational information system components, availability is directly based on the constancy and uninterrupted flow of the Internet. Internet attendance guarantees the continuity of IT services. In this communication, we introduce paradigms around the concept of service continuity, as well as the technical approaches and methodologies leading to its resolution. As the heart of the problem is indeed the non-continuity of service, we first start by framing the notion of continuity in the context of services offered by the information system and identify the failures resulting from the discontinuity; thus, we refer to related research to extract the tools and technological paradigms allowing the implementation of solutions that guarantee a minimum of service continuity. If the main element causing continuity is the availability of the Internet, it is obvious to look for an alternative path, which is a conventional PSTN telephone network. To complete the chain of solutions, we mainly used concepts such as voice and speech recognition, AI, NLP, and cloud computing. The research led us to introduce an important element between the user and the service: the request represented by a voice message. Thus, the broker guarantees the delivery of the message to the right recipient service, as well as the response to the user. All of these elements are orchestrated by a pipeline that guarantees the integrity of the request and response. The concepts related to speech recognition are used for the initiation of the process of the solution, along with the combination of NLP, with its two statistical approaches and neural networks, and cloud technology secures the solution in both directions. The targeted solution does not replace 100 \ 100 the availability, by default, of the service; however, our research aims for a minimum of continuity by preventing the organizational information system from being put into total shutdown mode.

Keywords : Cloud, PSTN, NPL, NLU, AI, MTTR, MTBF, RPO, RTO, SLA, SLO, LSR, SRS
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