***Abstract****:* The main disadvantage of human presence in the Call centers of GSM service providers is poor response time. The preference of IVR services by Nigerian GSM subscribers can be attributed solely to this fact. A system has been developed on the VoiceXML platform to serve as a panacea for this problem. The

developed system called ‘ASR4CRM’ obviates human-to-human interaction in the complaint lodging and solution provision process, by replacing it with humanto-

system interactivity. ASR4CRM has a 3-tier architecture. The telephone system constitutes the first tier; the VoiceXML gateway and the web server constitute the middleware, while the database constitutes the third tier. The system was tested with the top twenty four FAQs from a leading Nigerian GSM carrier (MTN) and successfully deployed on Voxeo voice server. The system has succeeded in removing the human intermediaries in totality for system-activated responses

with the attendant benefit of improved customer relationship management (CRM).

***Index Terms***: ASR, Customer Care Service, CRM, IVR, Speech-enabled, Speech-to-Text, VXML.