INDIA HAS MUCH TO GAIN FROM CHATBOTS

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Public services — governance, healthcare, disaster management — can improve substantially with the use of chatbots

India's busiest railway station has an approximate footfall of five lakh passengers/day. Every day, over a million transactions are handled across 13,000 Aadhaar centres. In a nation, where queues are omnipresent at public service buildings, a burning need for intelligent digital interventions is obvious.

India is expected to reach 627 million Internet users by 2019 end. This digital adoption is propelled by rural India, which registers 35 per cent annual growth. Why then is the common Indian not lapping up information from the many websites and apps launched by the Government of India? The challenges are many — literacy being the top one.

Citizens need to get information from many sources on multiple app pages, which require intelligent navigation. Even when there is (voice-based) search, forming the right queries is daunting even for the well-educated.

Enter chatbots. A chatbot is an artificial intelligence (AI) software that conducts a conversation in spoken or written natural language, ranging from simple questions to complex, elaborate discussions. A chatbot has the potential to make redundant the challenges of sifting through webpage menus, formulating search queries, etc.

According to Google, already, 30 per cent of queries in India are voice-based, with voice queries in Hindi growing annually by 400 per cent. One is thus compelled to ask if AI-based chatbots handle the ambiguity in Indian communication, where a single sentence can be delivered with multiple variations in slang, accents, interruptions, colloquial substitutions?

We are making great progress in this direction. Natural Language Processing (NLP) and speech experts have been fine-tuning the technologies underlying chatbots, by employing large repositories of spoken and written text to understand colloquial nuances and dialects. Furthermore, domain-specific chatbots are being designed (example, finance) by training them with domain-specific words and phrases.

For public good

Originally designed for business, chatbots can be used to improve aspects like these in any human activity: information sharing, data collection, advice and recommendation, decision assistance, qualitative and quantitative inputs to users or staff. Use of chatbots for civil good can be envisaged across four domains.

Public governance and services: Chatbots are ideal for time-bound relay of public announcements about power outages, traffic diversions, rallies, state and central government orders, curfews and emergencies. Single-window chatbots can enrich or even partially replace smart m-governance applications.

Chatbots can also reduce the pressure on enquiry and reservation counters at transport centres, through information sharing, booking and payment services. Chatbots are equally capable of collecting information so are suitable for filling forms, registering grievances, census and voting lists. For example, the Visabot in the US delivers enquiry-based conversations on nationality, purpose of visit; suggests the apt visa; looks up relevant documents and checks to ensure the entire application is in order.

Healthcare: Remote facilities that are poorly staffed can benefit immensely from chatbots. While chatbots may not be able to substitute the human touch and expertise of a medical officer, they can certainly disperse information effectively, including health guidelines, prescriptions; they can collect patient information and history. Chatbots like Zikabot in Peurto Rico have found critical use for timely relay of information and updates on epidemics.

Chatbots have been used in mental health interventions as they inherently provide anonymity. Woebot that works in 130 countries and our own Bengaluru-based Wysa are doing their bit in combating depression, by understanding one's mood, tracking emotions, and recommending mindfulness meditation and exercise. These bots may not be able to replace a competent therapist or psychiatrist, but their constant presence reassures quick support to those that need it.

Industry, trade and commerce: Chatbots can automate key parts of services such as supply-chain management, verification and documentation across state-managed, subsidised or regulated goods, customs and exports. Chatbots at SMEs can automate licensing, sanctions and registrations among others.

In agriculture, chatbots are the gateway to many other AI-based interventions, including data collection and diagnostic tools, weather and yield forecasting, procurement and resource management, automation of livestock management, soil health prediction, data collection on rainfall, acidity levels, etc. "Farmchat" is an Indian R&D activity to provide responses to complex farmer and agri-worker queries in Hindi, especially in potato farming.

Weather, environment and disaster management: 'Hawa Badlo' uses a messenger bot that monitors and keeps users updated on the local air quality index. Chatbots that interface numerous sources of environmental and weather information, to provide rapid, round-the-clock citizen services are an obvious application. There are also predictive bots now that foresee disasters, provide warnings for safe evacuation and assist in rescue measures. These use AI and ML solutions to sift through various data sources including social media feeds, to proactively initiate action.

The Richter Bot provides information on earthquakes and tsunamis in the US.

Will service windows go?

Clearly, there is immense scope for chatbots to provide intelligent assistance to enhance public service. However, the primary purpose of chatbots is to improve the quality of service by making information available for humans to make intelligent decisions and resolve problems. Chatbots can handle anticipated issues, but as the complexity of the decision increases, human service handlers will still be needed.

The efficiency of public service can substantially improve with the use of the right chatbots. These can overcome many challenges like geographical disconnects, time restrictions, anonymity and up-to-date information. NGOs and enterprises can leverage chatbots for advancing the impact of various existing social interventions, with minimal investments, while also gaining insights into the customer base.

The gap between an illiterate Indian and complex AI, ML, NLP algorithms could seem unfathomable to some at first glance. But such perception would be shallow. The best technology deployments in public service are the ones that keep the technology invisible and non-hindering. The possibility of chatbots replacing other user interfaces, smart apps, etc., is more real today than ever.

India is on the brink of phenomenal progress with digital interventions transforming even conventional government services. Intelligent, knowledge-rich, multilingual chatbots are a powerful next step in this direction.

Our In-house bot, Scalable Records and Information Assistant (SRIA) is an AI-powered agent that offers real-time answers for questions posed. Combines AI, ML, and descriptive analytics to deliver personalized, proactive and predictive experiences while running a smart business.

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