Developing collaborative communities to address complex problems

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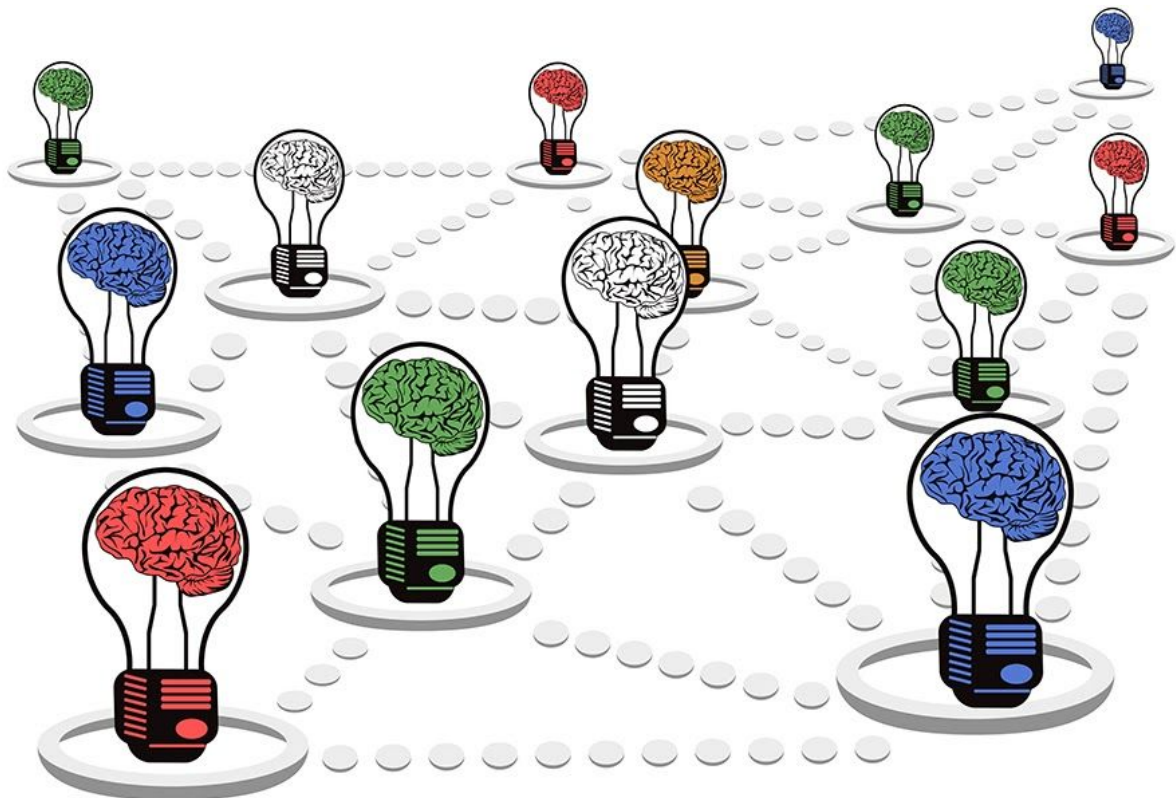

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In Prime Minister Narendra Modi's clarion call for "Atmanirbhar Bharat" lies an opportunity to create sustained efforts towards a culture of innovation and problem solving. The mobilisation of grand innovation challenges and hackathons to address the unique challenges of the Indian context amidst the Coronavirus crisis is a promising step in this direction. The 20+ COVID virtual hackathons and innovation challenges that were launched in India since the lockdown in March witnessed sizable participation, in part due to the advances in communication technology and collaboration tools. These events have been

backed by a variety of organizations and Government bodies (such as MeitY, MHRD, NITI Aayog etc).

The inherent complexity and uncertainty around the challenges posed by the pandemic underscores the wicked nature of the COVID-19 problem. In India, systemic issues such as those related to our health care infrastructure compound this complexity. Hackathons and innovation contests are a way to tap into the "wisdom of crowds" to elicit solutions through monetary rewards. The Nobel laureate Linus Pauling had said, "The best way to have a good idea is to have a lot of ideas". While ideation contests, hackathons and innovation tournaments generate lots of ideas and solutions, solving complex problems entails much more than merely pooling ideas and knowledge and instead requires synthesis through collaboration. Prize-based hackathons and challenges do not lend themselves well to socially complex and open-ended problems such as reducing pollution levels, improving sanitation, and so on. Government bodies routinely support prize-based hackathons for a multitude of problems. It would be worthwhile expending efforts towards engendering sustainable open-collaboration communities around specific problem areas that harness the diverse and novel perspectives and hands-on expertise of individuals from a variety of domains.

_RSS_While knowledge in communities of experts is difficult to transfer outside the domain, studies in the area of creativity show that novel solutions can be generated through analogical reasoning by individuals from peripheral domains. In a collaborative community, individuals who would normally not collaborate (health care practitioners and engineers) can cross-pollinate ideas and iteratively build on each other's perspectives, redefine the complex problem as more dimensions of it unravel and assess the underlying assumptions associated with the options available. Government bodies can provide funding and other forms of support to incentivize prototype development and pilot projects. As ideas would emanate through interactions within the collaborative community, any Intellectual Property developed would belong to the community and not to a particular individual.

Furthermore, a human-centered design approach for problem solving that places "empathy" at its center would be valuable in developing inclusive solutions such as around the delivery of public services. Inspiration can be taken from open innovation platforms such as OpenIdeo (by the design thinking firm IDEO) which has a global community of participants that use design thinking principles to develop solutions for complex societal problems such as improving sanitation in low income urban communities in Ghana.

One case in point is Coronathon, a volunteer driven COVID hackathon which attracted 3000+ volunteers to devise solutions to minimize the impact of COVID in India. Doing away with monetary prizes made way for flash teams where individuals with ideas could team up with those who could assist with building. Over the course of a month, 42 projects were

demoed by teams around a variety of themes and several projects eventually got deployed. This form of collaboration induced by the discovery and matching of ideas with skills was largely missing in other recent hackathons due to the modalities of competitive prize-based challenges.

Lastly, data on COVID challenges and hackathons suggests that participants from technical areas were over-represented in this arena. In a day and age where technical education may give a false sense of techno-utopianism, avenues for collaboration with peers from the social sciences, arts, policy etc can offer an enriching perspective and make one appreciate the limitations of technology in solving complex problems. The endemic issues in our health infrastructure have come to the forefront in the recent times. One recurring theme around which tech-based solutions have been proposed is health care, with ideas ranging from tracking hospital beds, symptom tracking, contact tracing apps and so on. Technical teams guided by health-care practitioners, administrators and policy experts about the realities and limitations of specific contexts can develop more pragmatic solutions vis-à-vis teams that possess the technical know-how but otherwise have a limited understanding of other important aspects.

Finding ways to truly harness the collective intelligence of India's diverse youth and talent will go a long way towards developing a culture of problem solving and experimentation. Tinkering with governance mechanisms, creating and sustaining diverse knowledge communities around citizen science projects and complex problems, understanding participant motivations and designing incentives for heterogenous participants across the stages of ideation, design and prototyping is necessary in this endeavour.

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