Maximising Innovation with Diversity

By Vikas A. Aggarwal , INSEAD Assistant Professor of Entrepreneurship and Family Enterprise

Bringing people from different backgrounds together to work in teams can help generate new ideas, but creating diversity across teams can unlock even greater innovation.

Organisations in today's era of hyper-competition are increasingly reliant on innovation to sustain a competitive advantage. This is particularly true for newly established start-ups, where ongoing innovation is fundamental to effective product market competition.

An important precursor to innovation is the ability to take knowledge from different areas and to recombine it in new and impactful ways. Teams are an important aspect of this process. Having people work in teams and sharing ideas can allow firms to create a more sustained pipeline of innovation than the "light-bulb moments of lone genius," as noted by Aspen Institute CEO, Walter Isaacson.   While the need for team-based innovation is widely acknowledged, less well understood is how multiple teams should be organised within a company in order to maximise innovation for the firm as a whole.

Knowledge recombination versus coordination costs

Much research has been done highlighting the positive impact of having diverse teams made up of members with varied technological backgrounds. What has often been overlooked, however, is the benefit that can be gained from across-team diversity – putting together teams which may not be diverse with respect to the composition of their individual members, but which are very different when compared to other units within the firm.

There are a number of reasons for taking a 'big picture' approach to organising teams. In order for innovations to happen, firms need to maximise the benefits of knowledge recombination and minimise the costs of coordination - the frictions and communication difficulties that occur because of the different backgrounds and experiences of the players. Often the very diversity that sparks the cross-fertilisation of new ideas within a team can stymie its use in new and impactful ways across the company.

Managers need to consider this when designing firms for innovation, particularly when the organisation has multiple innovations occurring simultaneously, and many interdependencies among its teams of innovators.

Team organisation and firm-level innovation

The impact that different approaches to firm-level team organisation have on innovation is the focus of a recent study with my colleagues David H. Hsu and Andy Wu from the Wharton School. In our paper **R&D Production Team Organization and Firm-Level Innovation** we studied 476 biotechnology start-ups from their founding date onwards, examining the implications for firm-level innovation of different approaches to organising the diversity of inventors' technical experience. Particular attention was paid to the interplay between knowledge production and coordination.

What we found was that companies organised with higher levels of across-team diversity – for example, creating very different teams each specialising in a particular area – had a greater positive impact on company innovation than those organised with higher levels of diversity within the unit.

There were contingencies however, one example being the extent to which inventors on a particular team had previously collaborated with one another. This relationship was found to influence teams' collective identity and group cohesion, making them less likely to seek out knowledge from other teams

hence reducing the benefits of across-team diversity. In addition, combinatorial novelty – the degree to which teams pursued truly breakthrough innovations – increased the benefits of ensuring diversity within a team.

Keeping an eye on the bigger picture

The results of this study can apply to many situations where there is a need for ongoing team-based innovation. Teams do not operate in a vacuum, and with innovation becoming increasingly important to a firm's success, managers need to pay attention to the tradeoffs between knowledge recombination and coordination costs at multiple levels of the organisation. Managing diversity should take into account not just a team-by-team perspective, but rather keep an eye on the bigger picture of across-team diversity.

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