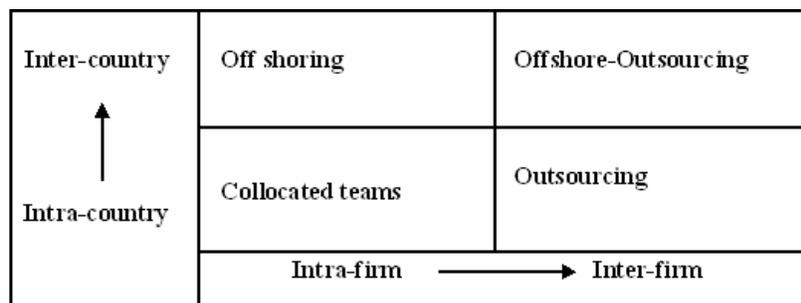


## Work Design Arrangements, Project Characteristics & Project Management Style: A Configuration Theory Approach for R & D Projects

*Cheryl Hailstorm checked her wristwatch wearily as she made her way to the elevator. It was 8.30 pm and a rather long and tiring day in office for her. As the Vice President of R & D at Ingen Corporation Inc., a leading manufacturer of hard-drive based mp3 players, it wasn't the 12 hr workday that was the reason for her weariness. She had already developed immunity to such long work hours, which were mostly spent fire-fighting issues across the spectrum of product development projects under her supervision. Rather, it was her lunch meeting with the company's CEO, which bought her face to face with a potentially bigger challenge. 'Ingenuity', their flagship mp3 player, was receiving a battering in the market place by its competitors, and the future of their next generation mp3 players was already in shadows following the corporate's decision to cut down on R & D expenditures. Cheryl had been asked to start considering the prospect of outsourcing a portion of in house R & D projects to development centers and engineering facilities in Asia. "What makes them think that outsourcing R & D projects is going to solve any of our problems? What criteria should I use to determine whether a project is outsourced or not? How should these projects be managed? And what is the likelihood that we will meet our performance goals, if we outsource? ", Cheryl wondered, as she drove out of the gates.*

Cheryl's case is not an isolated one. Most managers involved in knowledge based work like R & D have the same unanswered questions. These questions underlie a broader problem facing managers in R & D that concerns determining the an appropriate *work design* for their projects.

The tremendous growth in information technology hardware and software has opened up a number of alternatives for designing knowledge based work (see Figure 1), with "work design being no longer contained within a job or even an organization; it often transcends the boundaries of organizations, professions and countries" (Sinha and Van de Ven, 2005, p. 389). Organizations continue to respond to the appeal of these new, alternative distributed work designs (i.e., outsourcing, off shoring and offshore outsourcing). The short term benefits of time savings and cost savings from these alternative distributed work designs are readily apparent to managers and have a significant influence on their decision making. Consequently, distributed work designs have become the current *management fashion* (Abramson, 1999).



**Figure 1:** A typology of work design choices available to managers in R & D/Software projects

However, as with many managerially fashionable trends, success in distributed work organizing has not been universal (Hinds and Mortensen, 2005) and cases of failure abound. According to Gerybadze and Remer (1999) "distributed R & D activities and globally-dispersed innovation processes have resulted in overly complex and unmanageable organizational architecture. In this study, we make an effort to explore the effect of a work design choice on performance outcomes and the conditions under which such relationships hold. We anchor our research in the context of R & D/software development projects and propose that the performance implications arising out due to a particular choice of work design, is likely to be dependent upon the characteristics of the project (i.e. technological uncertainty and project complexity) and the project management style ( i.e. formal management

methods or flexibility). In other words, we anticipate that the extent to which performance goals are achieved is dependent upon the degree to which the work design choice for a project fits in with the project characteristics and the project management style.

Using the configuration theory perspective we conceptualize and model the various work design configurations as ideal types proposing that a set of gestalts or feasible sets of equally effective patterns exist in that, the “fit” or congruence between the choice of work design, the characteristics of the project (i.e., project uncertainty and project complexity) and the project management style (formal versus flexible management style), in a simultaneous manner, is likely to create successful project outcomes.

A survey instrument will be developed and will be used to collect data from a sample of R & D/ Software projects from multiple firms. A stratified sampling procedure would be used for the purpose with each strata representing one of the four work design choices for projects. The unit of analysis would be an R & D or software development project in a business organization with the unit of observation being project managers, project technical lead and senior team members.