New to an Organization: Tools to Assess Projects and Teams

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ABSTRACT

The complexity of project management and its value increase exponentially as the number and complexity of projects and interdisciplinary team participation increases. Managers must continually monitor the number and breadth of projects and the inner workings of teams in order to maintain the sophisticated view of the project environment required for effective project and program management. We have developed and implemented two techniques for rapidly gathering the requisite information.

Project impact and risk scales are used to assess complexity of the project from the team members' perspective, identify stakeholder and management expectations, and identify risk factors for project success, such as degree of cross-functional collaboration, urgency of results, and team expertise. Comparison of scores within and across projects provides the project manager with high-level, critical information on how to prioritize projects, assign resources, and ensure successful project completion. The risk scales can be adapted based on industry and portfolio of projects under review. An example specific to data analysis in the pharmaceutical industry is provided.

Network analysis is a tool that can be used to develop an understanding of organization structure and culture, communication and team behaviors, and other motivational factors that have an impact on team morale and project success. Network analysis graphically displays the interconnections and communication pathways across a team and organization. In our example, two questions were asked of every person within a company: Who do you go to for scientific or technical help? and Who do you regularly go to for advice?

These tools provide a high-level, quick assessment of projects and teams to support project management decision-making. Further research will evaluate the relationship between the network analysis results and project risk scores and their impact on project success.

INTEGRATED PROJECT TEAMS

- Today's biopharmaceutical companies are complex adaptive organizations (Figure 1). A multitude of projects are required to develop a compound, demanding extensive cross-functional collaboration, while projects and teams change on a more-than-desired basis. A new program manager no longer has the luxury to take a few months to assess the projects and project teams in their organization.

Figure 1. Illustration of the Complexity and Adaptive Nature of Drug Development
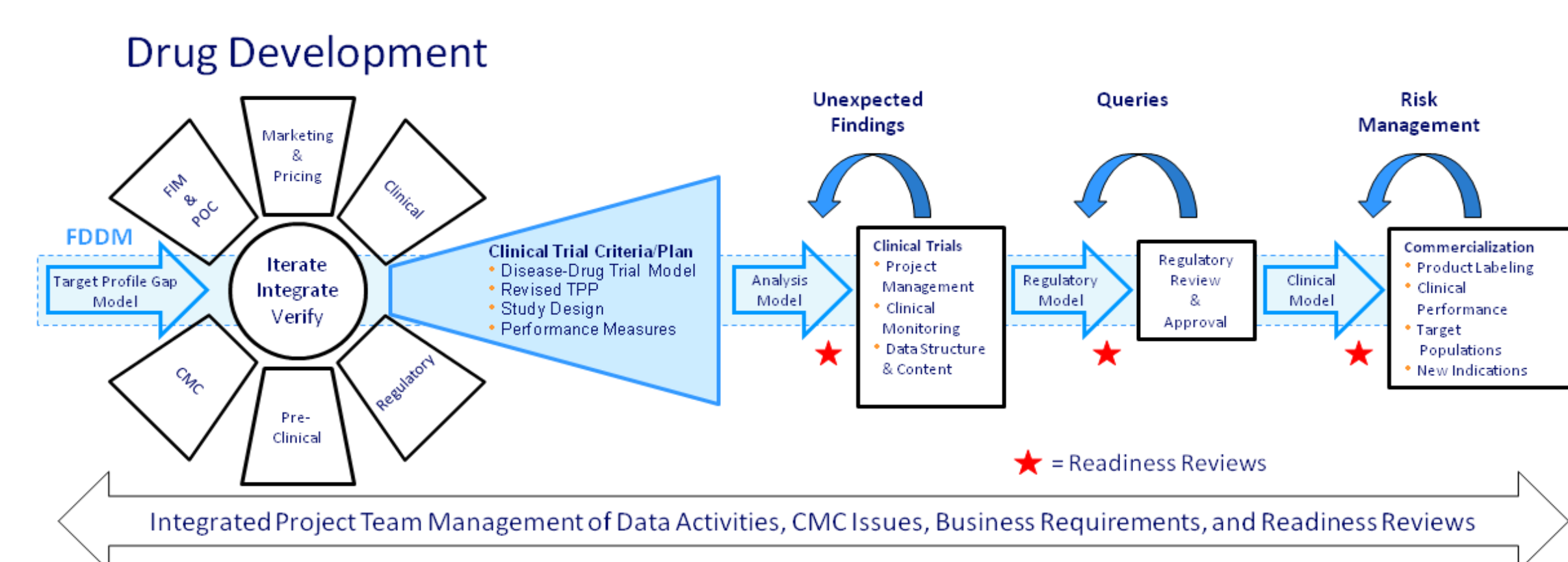
- Yet, the complexity of project management and its value increase exponentially as the number and complexity of projects and interdisciplinary team participation increases. Program managers must continually monitor the number and breadth of projects and the inner workings of teams in order to maintain the sophisticated view of the project environment required for effective project and program management.

- Two techniques are presented that can be used to perform a high-level assessment of projects and teams. By using these techniques, the program manager can understand the organization culture and structure, quickly set priorities, identify areas of risk, and identify areas of isolation and key players in the organization.

PROJECT IMPACT AND RISK SCALES

- Project impact and risk scales are used to assess complexity of the project from the team members' perspective, identify stakeholder and management expectations, and identify risk factors for project success, such as degree of cross-functional collaboration, urgency of results, and team expertise. Comparison of scores within and across projects provides the project manager with high-level, critical information on how to prioritize projects, assign resources, and ensure successful project completion. The risk scales can be adapted based on industry and portfolio of projects under review.

- In our example, we focused on a set of projects assigned to a newly formed modeling and simulation department with high expectations from senior management for the department to make a positive impact on the drug development process. A series of 17 projects was expected to be completed within the next six months.

- Figure 2 shows there is a high level of expectation of the modeling and simulation functional area by the clinical development teams in almost 75% of the projects, regardless of corporate sensitivity to the project. Yet the modeling and simulation team rates the level of cross-functional collaboration with the clinical development team as a less valued expectation for the projects. A deeper analysis of this message may be that in the short term, due to the urgency, the work just needs to get done, but for the long term the value or the acceptance of the models by the clinical development teams may actually diminish unless a higher level of cross-functional collaboration is developed.
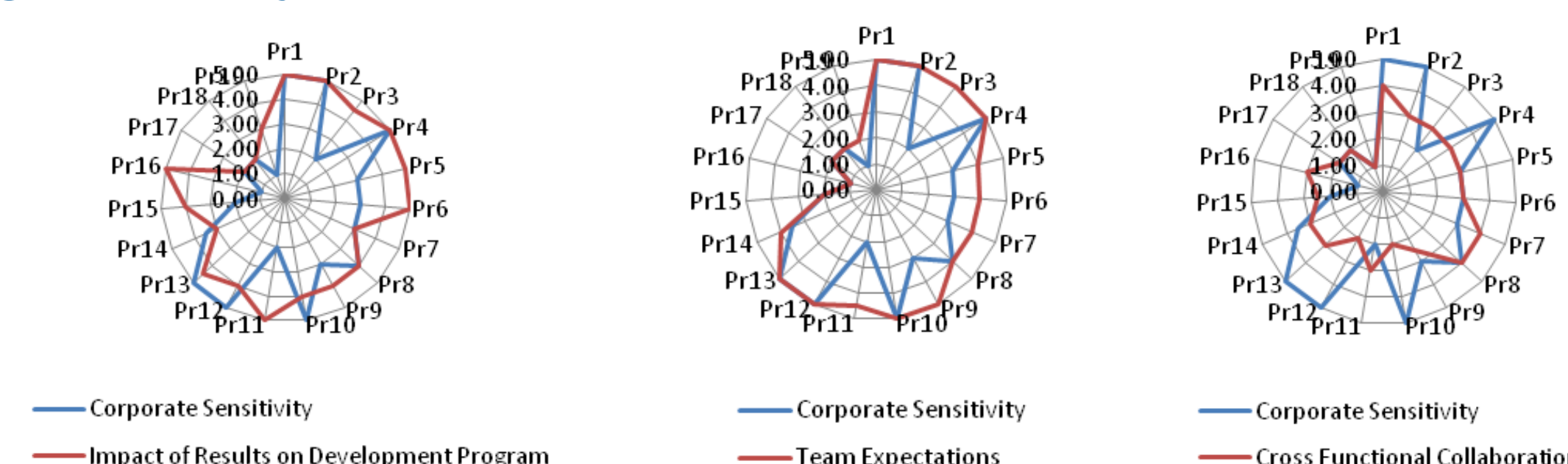
Figure 2. Project Impact

- Figure 3 describes the level of risk associated with the execution of the modeling activities in terms of model complexity, novelty of model, data complexity, and anticipated predictability of the model. The projects with a Level 5 ranking have the highest complexity. To proactively address these risks, a variety of risk mitigation strategies could be implemented to ensure the success of the projects, including securing more time to complete the modeling activities, providing additional managerial oversight, bringing in experts with the requisite experience and skill level, and facilitating communication with the clinical development team.

Figure 3. Project Risk
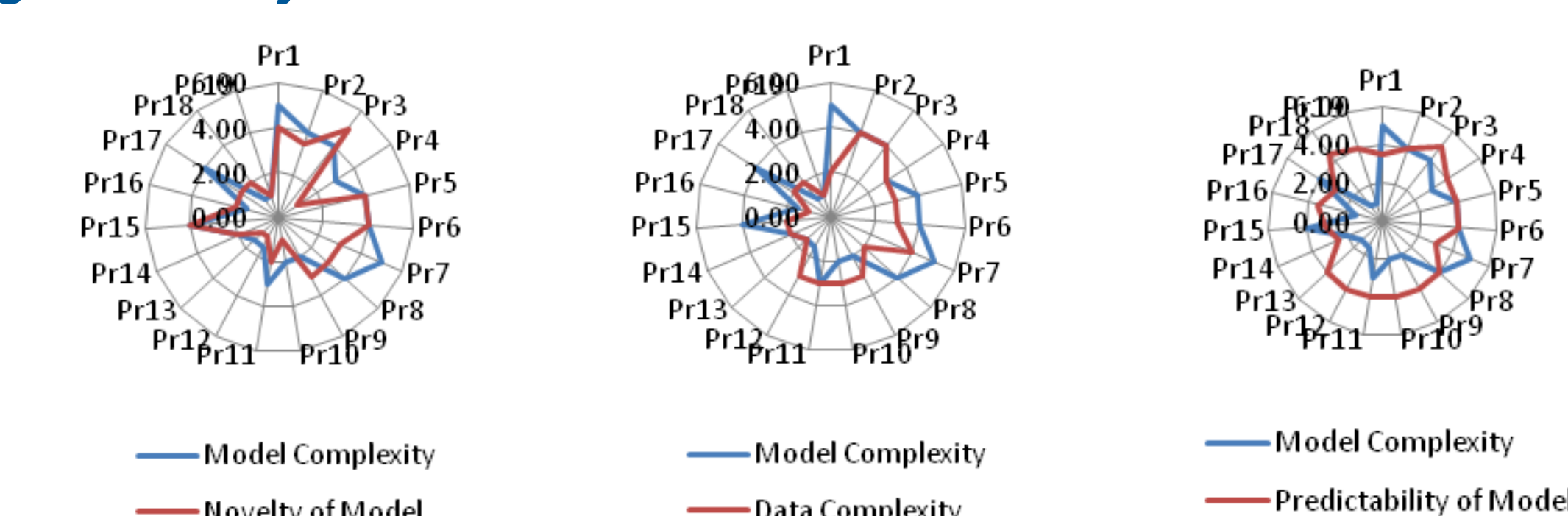
NETWORK ANALYSIS

- Network analysis is a technique that can be used to develop an understanding of the organization structure and culture, communication and team behaviors, and other factors, formal or informal, that may have a positive or negative impact on team morale and project success. Network analysis graphically displays the interconnections and communication pathways across a team and organization.

- In our example, two questions were asked of every person within a company:
  - Who do you go to for advice?
 - Who do you go to for technical/scientific help?

- In Figure 4, the network analysis illustrates considerable collaboration within the organization, yet there are a few central players that are consistently sought out for technical and scientific help.

Figure 4. Network Analysis Map of the Question "Who do you go to for technical/scientific help?"
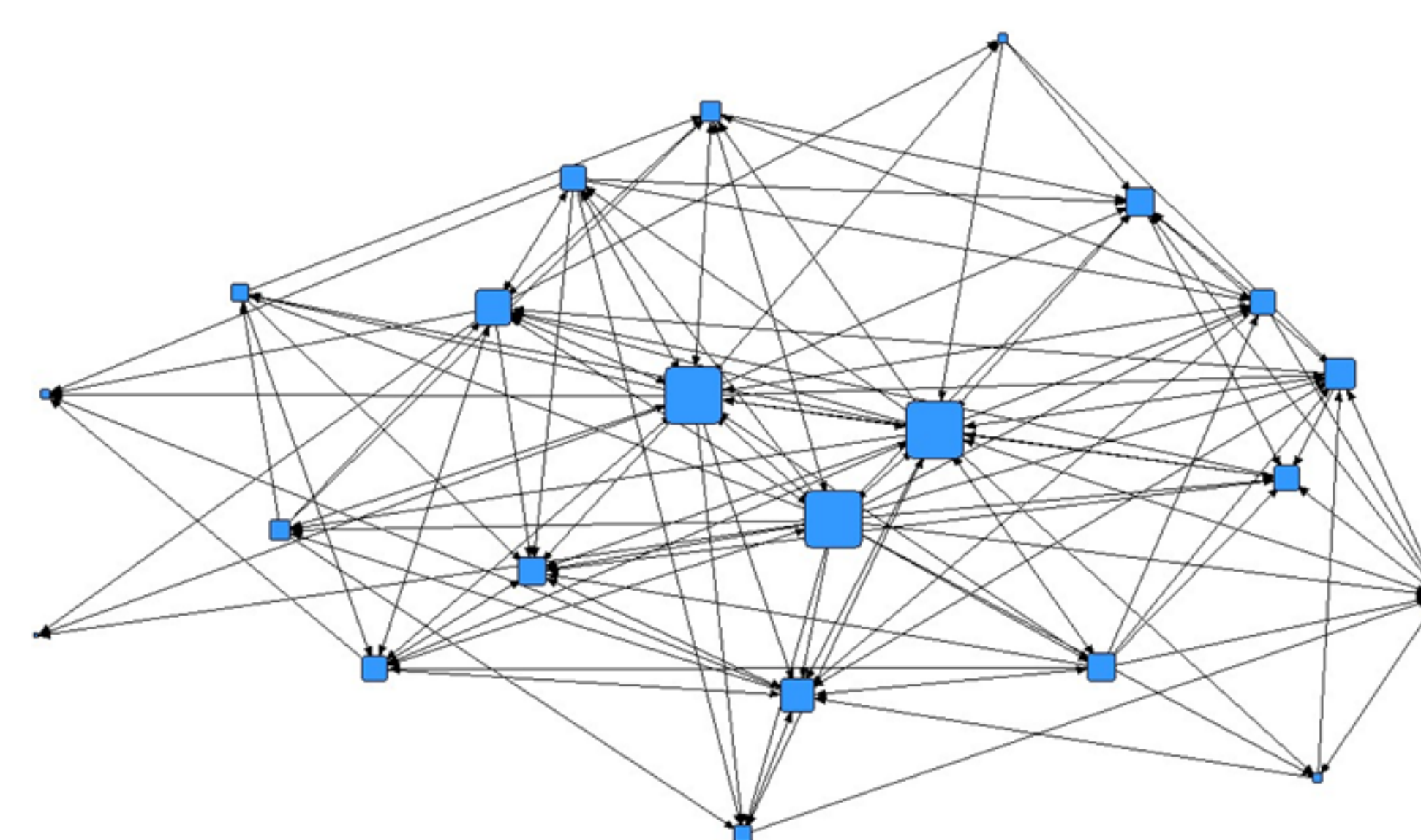
- In Figure 5, we delved deeper into the analysis of "Who do you go to for advice?" and stratified the analysis by functional area. Each color represents a different functional group. The analysis illustrates there is communication between functional areas, yet the advice pattern is generally more dense within sub-groups with the exception of a few key players that bring the functional areas together. In addition, there are a couple people who appear to be isolated.

Figure 5. Network Map Analysis of "Who do you go to for advice?" Stratified by Functional Area
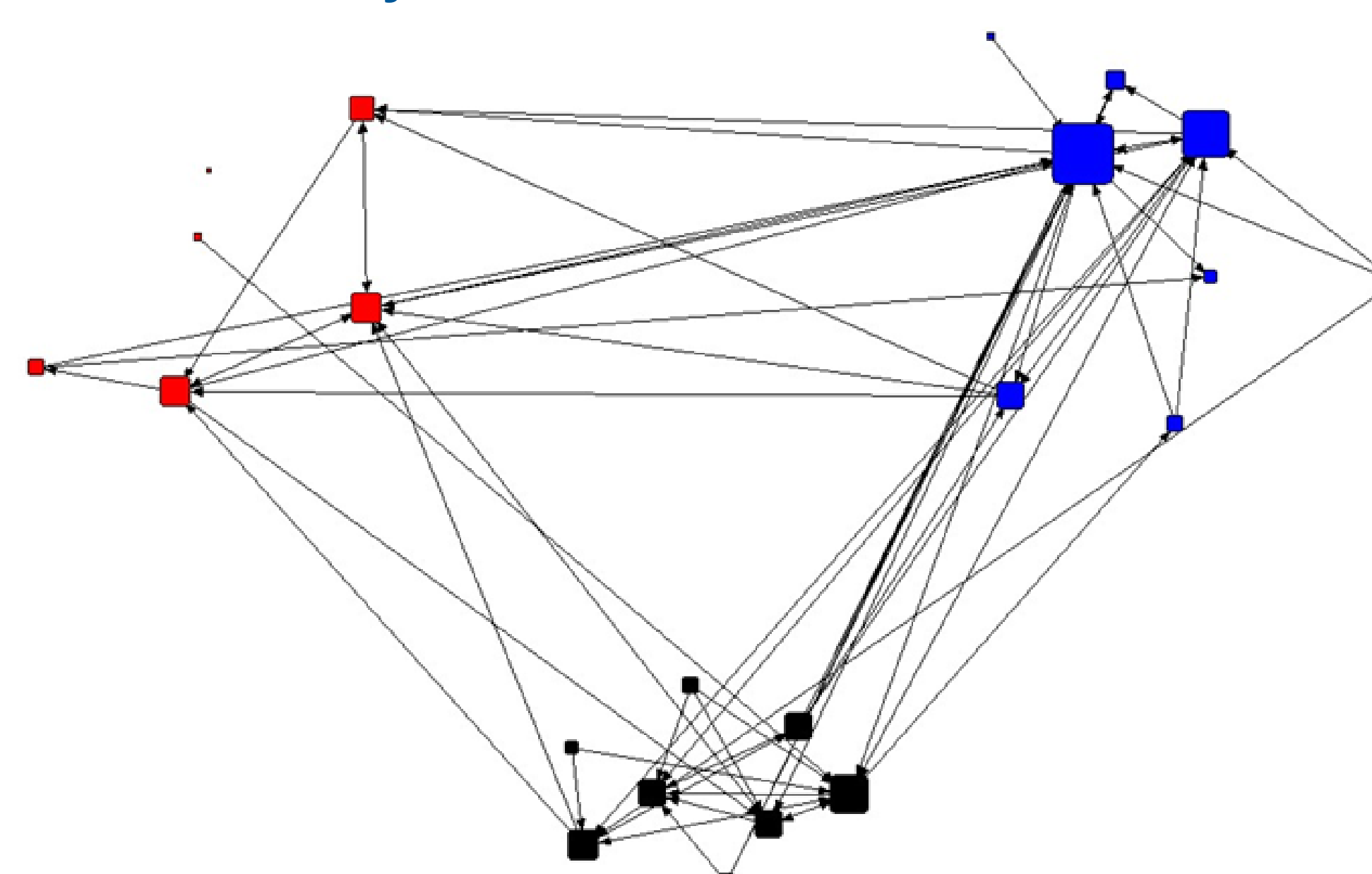
- The network maps, while showing good collaboration, demonstrate that there are key players in the organization who are the brokers of advice and facilitate scientific and technical communication across the functional groups. The project manager will want to work with these key players to keep projects running smoothly. However, at the same time, there is a large risk if the key players leave. The project manager will want to evaluate the map without the key players at a deeper level and quantitate the level of activity between other people making up the map:
  - What reach is there between people in the remainder of the organization?
  - Is there a complete lack of accessibility if any of the key players leave?
  - Who are the next level of players?

- Knowing this information, a project manager will want to put into place programs that will minimize the risk of key players leaving, such as incentives for the key players to mentor junior team members for more leadership roles, goals and metrics could be put in place that encourage different levels of collaboration, providing challenging opportunities, and rewarding the key players to secure their loyalty to the organization.

- The questions posed for the network map example presented here can be modified to address any issue where an organization might want to understand how information is communicated and distributed through the organization. Some example questions are:
  - With whom do you discuss the company vision and business strategy?
  - With whom do you discuss what is important and valued in the organization?
  - With whom do you work to get your job done?
  - From whom do you seek input, suggestions, and feedback before making a decision?
  - With whom do you discuss ideas, innovations, and better ways of getting things done?
  - To whom do you go for expert advice in doing your work?

- Ideally, for every person who is asked to answer the questions, demographic information such as age, gender, years of experience, functional area, reporting manager, etc. should be collected to allow stratification of the results.

NEXT STEPS

- Further research will evaluate the relationship between the network analysis results and the project impact and risk scales and their correlation to project success.

- Technology is often used as a storage of information. In today's organizations, storage of information is not enough. Information needs to be turned to knowledge and that knowledge needs to dynamically flow through the organization, sharing and building and creating innovation. Newer social networking technology (wikis, Twitter, blogs) need to be embraced by project teams and supported by project managers to determine how they fit into the new fabric of ever more complex projects.

SUMMARY

- Project impact, risk scales, and network analysis provide a high-level, quick assessment of projects and teams to support project management decision-making.

> Connected Knowledge (connections plus communication) = Pure Energy
>
> ~V. Cirovski

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