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Mapping and Analyzing NSW Blue Network to Leverage Insights for a Competitive World

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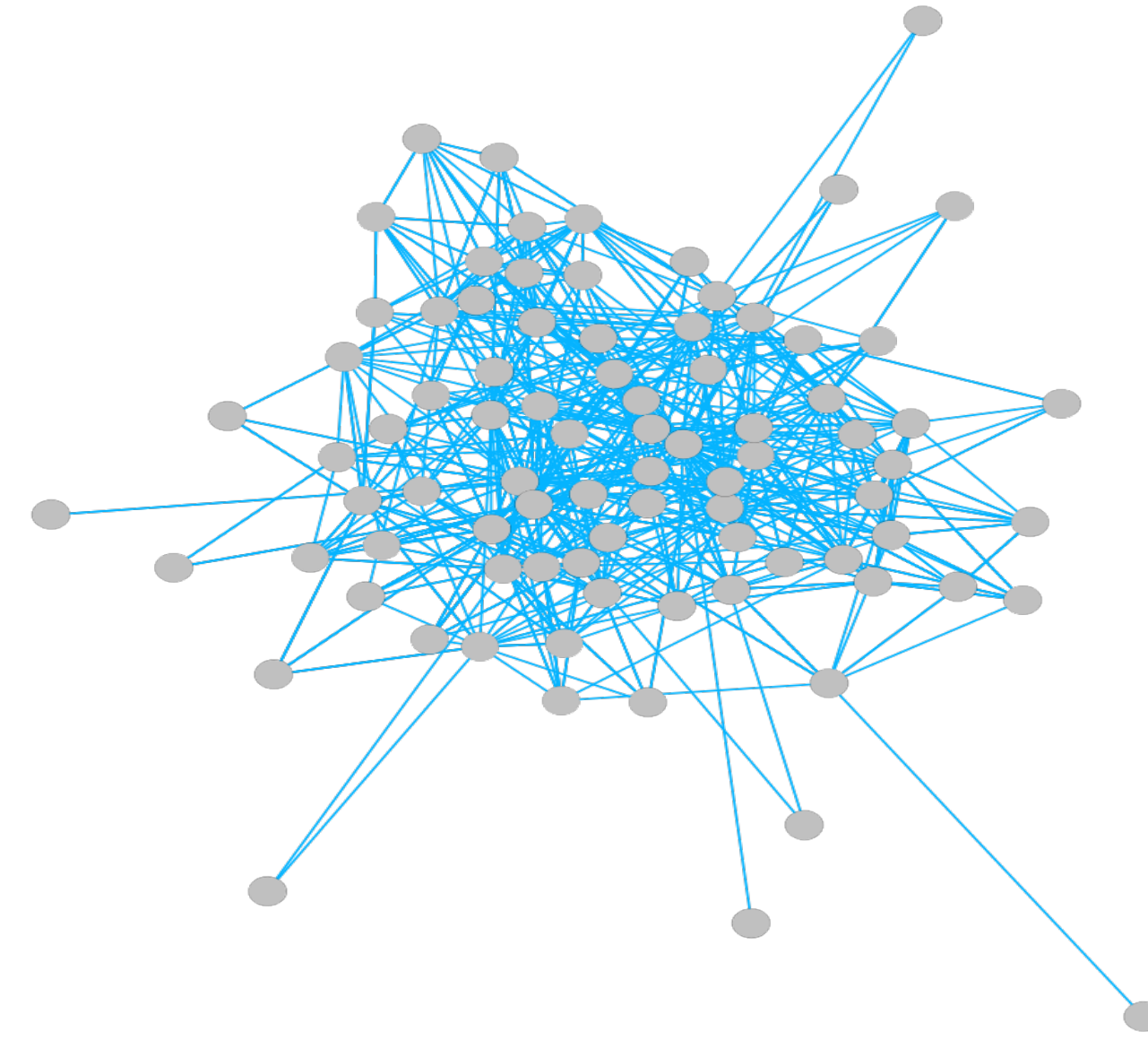
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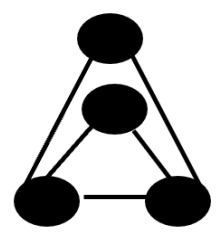
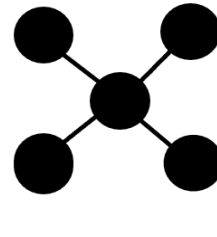


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Background

- NAVSPECWARCOM seeks to maintain a comparative advantage in a great power competition (GPC) context and in future operating environments.
- It needs to understand itself and assess the extent to which it is acquiring knowledge and resources from its “blue network” and outside experts.



Blue Network – Gray nodes ($n=85$) = Personnel; Blue ties = Combination of comms, personal, and colleague relations

Hypothesis	Interpretation
Cluster	 <p>Individuals who share multiple contacts in the communication network will communicate directly (higher-order closure).</p>
Hubs	 <p>Well-connected individuals in the communication network will emerge.</p>
Multiplexity	 <p>Tendency for those with <i>personal</i> ties to form regular communication ties.</p>
Multiplexity	 <p>Tendency for <i>colleagues</i> to form regular communication ties.</p>

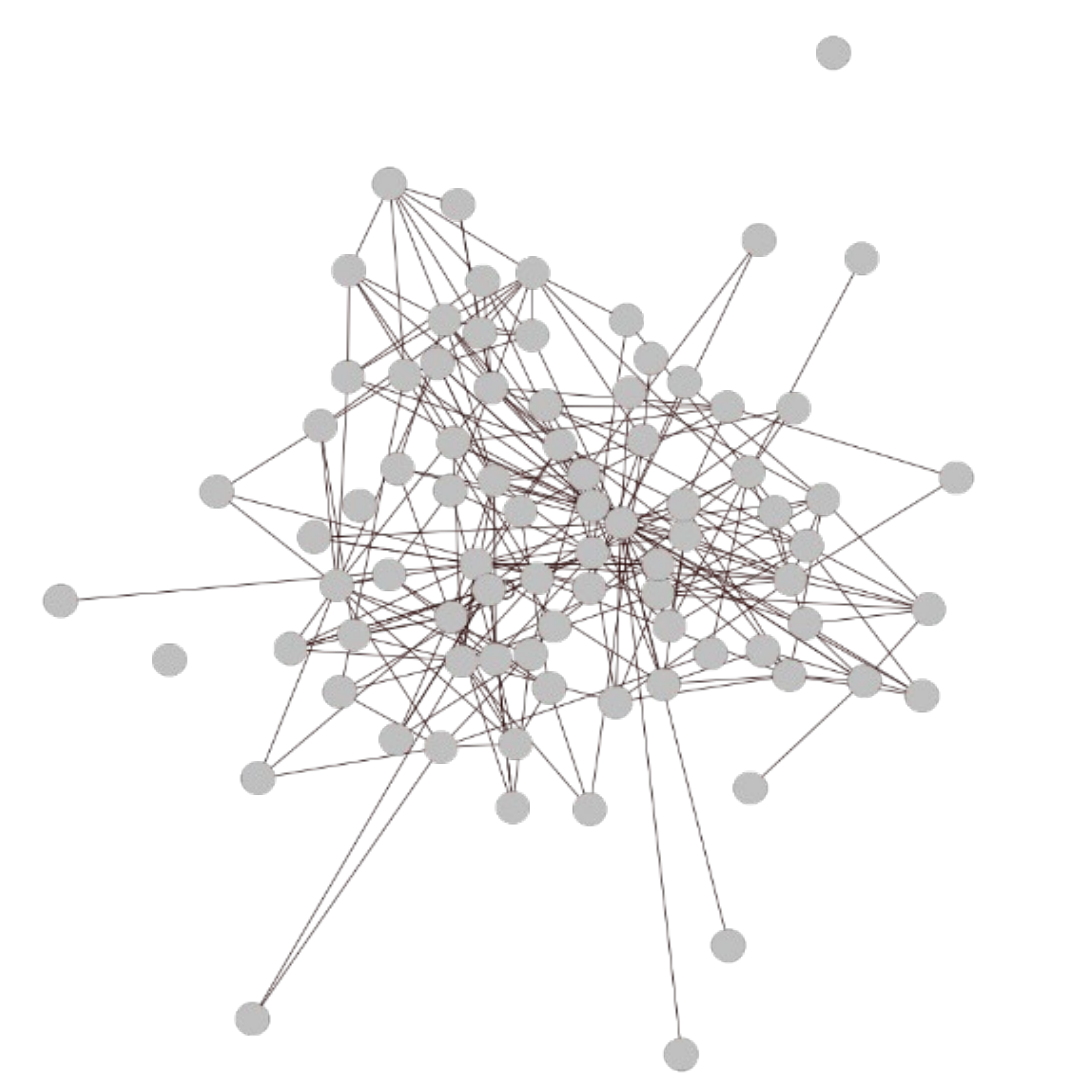
ERGMs – Main Effects (Control variables not shown here)

Approach

- Social network perspective on social capital (i.e., drawing value from one's network).
- Exponential random graph models (ERGMs) to test hypotheses about network's regular communication patterns at multiple network levels.
- Resource generator to collect data about the type of capital (e.g., resources and expertise) to which the command has substantial access, as well as areas in which it is vulnerable.

Analysis and Findings

- Communication clusters tend to form that can permit information and resources to transmit efficiently, especially in a decentralized form.
- The command can rely on *many* individuals within the network to gain access to capital rather than depend on a few well-connected individuals.
- Personal (e.g., friends) and colleague relations (e.g., same deployment in the past) contribute substantially to regular communication among personnel.
- The network can make improvements to ensure the informal, communication network serves the formal hierarchy more efficiently.
- The network has substantial access to technology-based capital but lacks access to capital in several substantive areas pertaining to GPC.



Communication Network

Recommendations

- Maintain entrepreneurial mentality but improve formal communication.
- Facilitate the creation of “short-cuts” among affiliated institutions.
- Task personnel to target key resource gaps.
- Immediately establish contacts with experts in key areas.
- Collect blue network and resource data regularly to understand it.
- Leverage information systems for data storage.



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