



Finding, Harnessing and Retaining Pivotal Employees

How CB Labs can help you understand the interplay between social networks and human dynamics, which are critical to managing productive large organizations

“PIVOTAL TALENT” REFERS TO HIGH-PERFORMANCE individuals, regardless of their level and rank within an organization, who have the most significant impact on the business. These are the employees whom companies seek to nurture and retain. However, finding pivotal talent is like finding needles in a haystack. In this white paper, we suggest that the days when companies identified pivotal talent based solely on anecdotal data compiled from interviews, performance reviews, etc. are behind us. CB Labs is developing powerful methodologies and software tools that will enable corporations to identify pivotal talent with pinpoint accuracy—taking them one step closer to the Holy Grail of workforce optimization: matching people and jobs, fitting the right person to the right job at the right time and, ultimately, paving the way for companies to more readily nurture and retain the pivotal talent that is responsible for creating enterprise value.

IN THE PAST DECADE, network theory revolutionized our understanding of complex interconnected systems, impacting a wide range of disciplines, from communications and organizational research to cell biology. This field has not only yielded insights into some of the fundamental organizing principles that govern real networks, but also provided a solid, unified mathematical formalism that is now widely applied across disciplines. In the area of social networks, we are witnessing yet another seismic shift: the analysis of the ever-increasing number of “digital traces” left in the wake of human activity and interpersonal communication. The study of these digital traces should revolutionize our understanding of human behavior. In the same fashion that IT has transformed much of the corporate world, a deep, data-driven quantitative understanding of human dynamics will fundamentally alter how

we constitute successful units or teams, evaluate outcomes and explore the role of individual team members towards achieving the overall goals of an organization.

HERE, WE ALSO DESCRIBE a research vision by CB Labs to develop and apply methods that would enable fine-grained observation and analysis of social interaction in small and large groups (from dozens to hundreds of thousands of individuals) that was previously impossible. Our research will rigorously examine the

validity of the collectable digital traces, aiming to capture and quantify the signatures of effective collaborations and working relationships. We aim to scale the analysis from individual behavioral patterns to how interaction patterns impact the performance of a team or an organization. The research is expected to answer such questions as: What types of interaction patterns are associated with effective team performance? What types of interaction patterns are optimal for effective coordination? What is the role of information sharing in collective problem solving? What types of

interventions trigger effective interaction patterns, and which ones enhance group performance?

The purpose of this work is to use the insights that have been obtained so far in network science and human dynamics in ways that are directly relevant to your company’s leadership and to identify opportunities within your company where these tools would have immediate benefits; to develop the tools for data collection and interpretation, while meeting the appropriate privacy and security requirements; to correlate the collected socio-behavioral data with rigorous network-based performance metrics; and to develop the mathematical and analytical underpinnings of organizational behavior.





Finding, Harnessing and Retaining Pivotal Employees

CB Labs envisions three complementary projects that are highly relevant to your company:

(1) Understanding the human dynamics of medium-size and large social networks. The first goal is to explore the behavior of large-scale social networks, allowing us to understand what is normal and standard in human dynamics, and to explore issues related to the formation of communities, their temporal evolution, communication patterns within communities, and the impact of user location and mobility on the formation of social links and community evolution. The starting point of this research is an already available dataset that captures the mobile communication patterns, together with the physical location of the users when they communicate with each other and their real-time mobility patterns. Deliverables would include the fundamental dynamic and structural characteristics of social networks, together with a mathematical description of the real-time communication patterns, representing the foundational starting point for the more detailed research that focuses on specific organizations.

(2) Mapping out existing organizations. The leaders of any organization have a preconceived notion of the desired communication patterns within and between the various units they supervise. While the organizational chart quantifies the mission of an organization, the real communication patterns are frequently divorced from the formal chart. These deviations are often beneficial, reflecting the real needs and the inner dynamics of the various units. The goal of this research program is to develop the tools to map out and interpret the real structure of specific organizations, whose size ranges from a few dozen to potentially tens of thousands of individuals. The deliverable would come in the form of dynamic network maps that characterize the organization, offering a clear understanding of where information flows and how the underlying social network impacts performance metrics. To succeed initially, CB Labs would need to work with the IT department of your organization to extract information pertaining to the communication patterns of the employees/workers/participants (who talks, e-mails, calls or otherwise communicates with whom, when and where—for the initial phase the content of the message being irrelevant, retaining only the act of communication).

3) Micro-monitoring team formation and performance. This third project aims to explicitly deploy sociometric devices

among the members of smaller and medium-size units (like offering specially designed cell phones to the employees, or installing software on their existing devices that could capture the pertinent information), to measure the microscopic details of team communication and their impact on individual and team performance. Deliverables would include tools that help identify which employees are the effective leaders in a unit and the role of each individual in achieving the goals of the group, as well as actionable, dynamic real-time maps of the communication patterns. The data will then offer network-based metrics correlated with performance at the individual and unit level and help us understand what makes a team successful by answering such questions as: Do prior ties among specific teammates make them more likely to work together? Do teams made up of people who knew each other prior to a task perform better, and for what kinds of tasks is this the case? Is the timing (e.g., early vs. late) of interactions during the task correlated with how well the team performs?

THERE ARE OBVIOUS ROADBLOCKS for this research. Some are policy- and security-based, pertaining to data collection and evaluation; thus projects (2) and (3) cannot be put into practice without the direct participation of your company researchers. However, a significant fraction of the methodology development and validation can be done, pursuing field deployment once CB Labs achieves sufficient clarity of the pertinent methods and technologies.

IN PERFORMING THIS RESEARCH, CB Labs can build on the experience of several key researchers, as particular projects require. A-L Barabási (NEU & Harvard) is one of the founders of network theory and also pioneered the use of large prerecorded data to understand human dynamics. Potential collaborators include David Lazer (NEU & Harvard's Kennedy School), a political scientist and organizational scientist with considerable experience in designing sociometric experiments; Sandy Pentland (MIT Media Lab), a computer scientist who pioneered the development of sociometric devices and their use for monitoring social behavior; and others, as required.

To learn more about how CB Labs is helping a wide range of companies, contact: Grant P. Lussier, Managing Partner.

646-216-9663 or grant@celeraresearch.com.

All contents are Copyright © 2009 Celera Search, LLC, Celera Partners and Laszlo Barabasi. All rights reserved.