

# Relationship Analytics and Organizational Network Analysis in the Remote / Hybrid Work Model

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**Abstract**—The possibilities of using organizational network analysis as a relationship analytics tool to improve human resource management are considered. It is shown that the organizational analysis of networks based on the use of digital technologies makes it possible to assess the dynamics of relationships and the impact that they have on employee engagement and the effectiveness of the organization. The possibilities of using organizational analysis of networks to identify and solve new problems caused by the transition of employees to remote work are shown.

**Keywords**—relationship analytics, organizational network analysis, digital technologies, hybrid work model.

## I. INTRODUCTION

Currently the success of organizations, especially those operating in a competitive market, depends on investment in the development of intangible resources. Due to the complexity of the relationships between the organization's intangible resources, the issue of their assessment and control in the management process is still open. Collaboration and coordination are more likely to occur through informal networks rather than through formal reporting or regulated work processes. Informal networks are more effective when unexpected problems arise: for example, when a task must be completed quickly, employees can use informal networks to go through formal reporting procedures and meet deadlines.

The rapid transition to remote work and virtual collaboration in the context of the Covid-19 pandemic, and subsequently the expansion of the use of the hybrid model of work, the study of informal networks in organizations is even more relevant. Research shows that appropriate network relationships within organizations can have a significant impact on productivity, learning, and innovation.

## II. ORGANIZATIONAL NETWORK ANALYSIS AS A RELATIONSHIP ANALYTICS TOOL

Analytics group Gartner has identified relationship analytics as one of five key trends in business intelligence [1]. Situations in which relationship analytics results can be most meaningful:

- mergers / acquisitions
- development of new products

- innovative initiatives
- change of organizational culture
- increasing the efficiency of the team
- improving organizational design.

In this regard, it is of great interest that because of its immense potential, Organizational Network Analysis (ONA) – has a structured way of visualizing of how communications, information and decisions pass through an organization allowing a company to analyze employee interactions. Organizational network analysis, which emerged at the intersection of sociometry and network analysis, is not a fundamentally new research method and has been thoroughly tested in the business environment by many researchers and practitioners for over a quarter century. Various ways of its application are possible, first of all, polls, but it is fundamentally important that digital technologies take ONA to a qualitatively new level, expanding the possibilities of analytics of relations and making informed decisions.

Thanks to the use of digital technologies in ONA, companies, without resorting to special surveys, can obtain objective information about how employees work and interact, using for this purpose the metadata of e-mail, phone, social media (internal and external), collaboration platforms (Slack, portable sensors, etc.).

The analysis of data obtained during the practical use of ONA and social profiles of employees allows:

- highlight the strengths and weaknesses of interactions and knowledge sharing that occur between individuals, project teams, departments or other important groups in the organization
- identify informal leaders, employees who enjoy the greatest influence and trust, possible “knowledge brokers” that accelerate the exchange of ideas and information
- help understand which relationships are centered around critical employees
- identify underutilized resources and risk areas (managers and specialists located at the network edge), reasons for turnover and low productivity, redundancy of roles performed, while freeing up talents to perform truly promising work
- help accelerate the adoption of strategic changes (for example, implementation of SAP, Agile methodology,

digital transformation), organizational restructuring (mergers, acquisitions, internal reorganizations)

- increase individual and organizational performance
- obtain the necessary information to optimize organizational structures and ensure functional clarity.

According to a Deloitte report [2], 48% of companies are experimenting with ONA. LinkedIn, Facebook, Twitter, and the New York Times went through ONA to understand how different groups communicate, interact and compete with each other.

ONA is regularly hosted by consulting firms Deloitte and McKinsey, and products such as Microsoft Workplace Analytics, TrustSphere, KeenCorp and Yva.ai include tools to analyze informal organizational networks. Employee survey and feedback tools are rapidly becoming “action platforms” - systems that collect information and turn it into recommendations for leaders.

A new generation of vendors are now offering innovative listening platforms that go beyond express surveys. The segment is overgrown with a scalable corporate infrastructure that allows collecting employee opinions, feedback and various forms of surveys.

On average, only 4% of influencers (influencers) identified by ONA can have a significant impact on nearly three quarters of employees. The best performers collaborate more purposefully, which makes them 18-24% more effective than the rest of the staff. At the same time, more than 50% of opinion leaders are usually unknown to the management, which means that the company can miss a lot by appointing “change agents” without using ONA [3].

Relationship analytics using ONA is also of considerable interest in connection with solving problems of personnel engagement management. ONA allows you to look at employee engagement not as a state, but as a relationship that can be developed (through the actions of an employee, the quality of his networks), using specific programs and, especially, digital technologies, as well as draw attention to exceptional but introverted performers. who can benefit the entire company by interacting with team members and sharing their expertise. Research shows that between 20% and 35% of the added value of collaboration comes from an average of 3% to 5% of employees, and an employee who often contributes to work outside his role can improve team productivity more than all other members combined. [4, 5, 6].

Studies show that ONA allows you to answer the following questions:

- How cohesive is the network?
- Do hierarchy, formal structure, or functional group teams restrict the exchange of information between employees?
- How well do employees know the experience of others on the network and how accessible are they?
- Who is most influencing the change process (positively or negatively)?
- Which employees are overly involved in interactions? Which employees are at risk of burnout?
- In which areas can turnover cause the greatest loss of knowledge and connections?
- What behavior is typical for the most productive leaders and teams?

- Is there a serious risk of knowledge loss and network disruption if a handful of people leave? In which areas can fluidity cause the greatest loss of knowledge and connections?
- Which employee is the subject matter expert and HiPo expert?
- How can the impact of diversity and inclusion initiatives be measured and improved?
- How can you stimulate innovation in your organization?

ONA, as a method of passive analysis based on metadata, allows real-time insight into the nature of the relationship between the leader and the employees. It does this by analyzing team-level collaboration in digital tools used for communication, meetings, document writing, project management, and more. As a rule, the volume, frequency and type of interaction between managers and their teams is analyzed. The score obtained gives an idea of how much the leaders are busy with the day-to-day work of the team or more distant.

ONA can provide insight into how attentive or responsive leaders are to their teams' requests. It does this by looking at the ratio of messages sent to leaders by their teams and their responses. By analyzing the calendar data, you can determine which leaders are planning regular one-on-one meetings with their teams, and which are not. In addition, you can determine how often these meetings are rescheduled, canceled, or other appointments are scheduled at the same time. Research confirms that in teams where there is regular 1-on-1 communication between the leader and the team members, employees are several times more likely to be engaged / satisfied.

The ONA can show how managers influence the work-life balance of employees: the analysis usually determines whether managers send an email to employees after hours, whether they schedule meetings in the evening or ask team members to work on weekends, etc.

ONA can also help determine if leaders have the authority and resources to effectively lead their teams. In particular, do managers have access to senior management where decisions are made, do they have access to important organizational information? The information obtained will allow justifying interventions that will lead to the strengthening of leaders at the command level.

### III. REMOTE / HYBRID WORK: NEW CHALLENGES FOR RELATIONSHIP ANALYTICS

In the context of the sudden and rapid transition to a remote / hybrid model of work and virtual collaboration caused by the COVID-19 pandemic, employees had little choice: they were largely unprepared for remote work, did not have relevant experience, were for the first time distant from teams.

In a changed environment, companies must adapt to new methods of identifying which employees are struggling to migrate to remote / hybrid work. In practice, many high-performing employees can experience reduced productivity and engagement when they are outside the office. Lack of direct control, limited access to information, social isolation and household distractions can also negatively affect employee engagement and productivity [7].

In such an environment, ONA can identify potential vulnerabilities and ways to improve employee productivity and well-being when managing remote teams. By analyzing the communications network, managers can identify gaps in information flow, extract the history of communications before the company switched to telecommuting, and compare it with communications data from the time the company started working remotely. For example, Uber used ONA to analyze the network of its high-performing salespeople, looking at how they interacted with other employees in sales and with employees from other departments (such as marketing). The average model generated from the data was then used to identify those who are less productive and train them in order to improve the efficiency of interaction and expand their own networks.

Companies should empower their new hires and encourage them to form connections throughout the organization, using ONA to track who may need help. One of the most effective ways to create trusting and meaningful connections between remote teams is to participate in team building activities. For remote groups, there are many fun activities that can help a new person integrate more easily into the company (from fun Slack channels to online gaming).

The information generated by ONA can reveal specific diversity and inclusion issues faced by the company (for example, the problem of implicit bias, where employees subconsciously prioritize the views and opinions of employees of the same gender / race / religion / ethnicity / age, which and themselves), and give a clearer direction for solving problems. When the different groups are well integrated, important decisions can be made easily. For example, if a company wants to discuss changing employee incentives and benefits to accommodate telecommuting, decision making would be better if all diverse groups were included and everyone's voice heard.

The scale of teleworking, in which ONA can be useful, is the professional and / or emotional burnout of employees when using digital technologies ("digital" burnout). Since employees will work from home, their personal and work lives can overlap, they will often work overtime and have many night meetings. Digital burnout can occur due to too much communication, digital activity during late hours, too much time spent in meetings, and much more. The most risky are those who connect the majority of employees in the informal network to each other (the so-called "bridge builders"). They do not necessarily act as managers, but they are well connected with people in their department and with people in other departments, they can provide important information or know who in the company has the information or experience to get the job done.

By using communication tools such as Slack, email, or project management software, companies can gather information about who has been overworked and predict the risk of burnout. This is very important because if the bridge builders leave the company or their productivity decreases due to burnout, the bonds between isolated groups can break. The bottleneck can be considered to be the presence of only a few such employees in the company. This means that the company will depend on a few people and will always be in danger if the "bridge builders" leave the company and leave entire teams to work on their own.

ONA provides objective, evidence-based insights that can help leaders understand which connections between employees should ideally happen in person and which can happen virtually, and the benefits that each modality brings to the employee and the organization. This method also helps motivate employees to resume some personal interactions by showing them how hybrid work can improve their own performance.

The ability to see patterns of relationships and interactions can help a leader make more accurate and targeted decisions to improve the effectiveness of the group, create a more productive organization than, for example, conducting more Zoom calls and conferences.

It is of fundamental importance that the ONF, conducted continuously and in real time, allows one to assess the dynamics of these relationships and the impact that they have on the performance of the organization by presenting the results visually.

#### IV. CONCLUSION

Organizational network analysis adds dynamic "social capital" data to the usually static "human capital" that HR teams typically rely on (the networks and relationships that employees build to get work done). It is fundamentally important that ONA, conducted continuously and in real time, allows you to assess the dynamics of these relationships and the impact that they have on the performance of the organization, presenting visually presenting the results.

At the same time, since it is assumed to use passive data sources (email metadata, etc.), a prerequisite for the use of organizational network analysis is building transparent communications between the company and employees regarding what data is supposed to be used, for what purposes, what benefit it will bring, close interaction with lawyers, IT and representative groups of employees, establishing clear control over the collection and storage of data in order to ensure an adequate level of security, confidentiality and anonymity (unclear purpose of the analysis may cause concern and increase employee distrust of the company).

A lack of understanding of informal networks and relationships can pose a threat to the company: for example, if employees oppose certain changes, they may use informal networks to easily sabotage the company's plans.

#### REFERENCES

- [1] (2019) Gartner Reveals Five Major Trends Shaping the Evolution of Analytics and Business Intelligence. [Online]. Available: <https://www.gartner.com/en/newsroom/press-releases/2019-10-02-gartner-reveals-five-major-trends-shaping-the-evoluti>.
- [2] (2017) A. Rahnema, I. Van Durme, I. *The organization of the future: Arriving now*. [Online]. Available: <https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2017/organization-of-the-future.html>.
- [3] R. Cross. *Beyond Collaboration Overload: How to Work Smarter, Get Ahead, and Restore Your Well-Being*. Harvard Business Review Press, 2021.
- [4] M. Fryczyńska. *Organizational Networks and Networking Competence: Contemporary Challenges in Management and Employment (Routledge Studies in Business Organizations and Networks)*. Routledge, 2021.

- [5] (2019) P. Leonardi, N. Contractor, N. *Better People Analytics*. [Online]. Available: <https://hbr.org/2018/11/better-people-analytics>.
- [6] V.G. Kononova, R.V. Aghgashyan, S.S. Galazova. *Perspectives and Restraining Factors of HR Analytics in the Conditions of Digitization of Human Resources Management*. In: Popkova E.G., Ostrovskaya V.N., Bogoviz A.V. (eds) *Socio-economic Systems: Paradigms for the Future*. Studies in Systems, Decision and Control, vol 314. Springer, 2021.
- [7] (2021) R. Cross, P. Gray. *Optimizing Return-to-Office Strategies with Organizational Network Analysis*. [Online]. Available: [https://sloanreview.mit.edu/article/optimizing-return-to-office-strategies-with-organizational-network-analysis/?utm\\_source=twitter&utm\\_medium=social&utm\\_campaign=sm-direct](https://sloanreview.mit.edu/article/optimizing-return-to-office-strategies-with-organizational-network-analysis/?utm_source=twitter&utm_medium=social&utm_campaign=sm-direct)