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Creating the collective mind through virtual mirroring based learning  
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## Creating the collective mind through virtual mirroring based learning

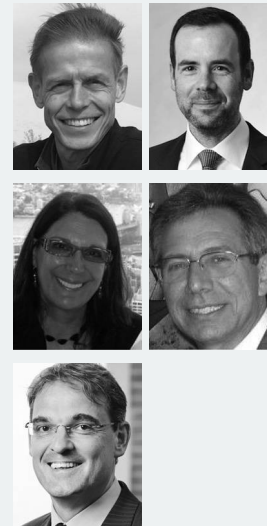
Peter Gloor, Kai Fischbach, Julia Gluesing, Ken Riopelle and Detlef Schoder

One of the main challenges of an organization is the creation of a “shared organizational DNA”, where members of the organization instinctively know how to act for the best of their enterprise under unexpected circumstances (Weick, 1995). The framework of social quantum physics (Gloor, 2017a) provides a systematic method for individuals to see where they are positioned within the social fabric of their enterprise, and to take corrective action to communicate and act more efficiently within their organization, extending the concept of transactive memory (Chatterjee, 2016). Social quantum physics builds on social physics (Pentland, 2014) and consists of the four parts “empathy”, “entanglement”, “reflect”, and “reboot”:

- *Empathy*: Similar to the wave-particle duality of quantum physics, the theory of mind suggests that a person’s mirror neurons will fire in parallel to the neurons of a suffering opposite. Creating a culture of empathy with passionate and empathic leaders is key to creating a collectively intelligent organization.
- *Entanglement*: Similar to entangled particles, which will change their direction of spin instantly even if geographically apart, members of an entangled organization will instinctively know what to do at any location in case of crisis. Entanglement is built through empathy.
- *Reflect*: To support and nurture entanglement and empathy, members of the organization should reflect on their interaction with other members of the organization. One way of reflecting on interaction is to obtain a virtual mirror of one’s communication behavior with others. This virtual mirror is created by analyzing organizational communication archives such as e-mail, phone logs, or calendars.
- *Reboot*: Virtual mirroring allows individuals to track and change their behavior according to the seven honest signals of collaboration (Gloor, 2017b): “strong leadership”, “balanced contribution”, “rotating leadership”, “responsiveness”, “honest sentiment”, “shared context”, and “social capital”.

Virtual mirroring consists of mirroring back to individuals their social network, identifying their most important contacts, influencers, and communication bottlenecks. In addition, they get recommendations for improving communication toward their job-specific tasks, for instance in sales, R&D, product development, or management. This feedback is given in terms of the seven honest signals of collaboration, which can be automatically created from e-mail archives, online calendars, and phone and Skype archives (Gloor, 2017b). The seven signals of collaboration are as follows:

1. *Strong Leadership* is measured as the number of people each person is directly connected to in a network, as well as the influence of the people who the person is connected to.



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2. *Balanced Contribution* indicates how balanced the communication inside a team is in terms of messages sent and received.
3. *Rotating Leadership* is a measure of how frequently people change their network position in the team, from being leaders in a central position to moving to a more peripheral position. In a series of research projects, it has been shown that rotating leadership is a proxy for creativity (Gloor, 2017a, Davis & Eisenhardt, 2011).
4. *Responsiveness* measures the speed in number of hours it takes a person to respond to e-mails. How quickly somebody responds to incoming messages is a proxy for their passion, while the speed with which others respond to somebody's messages is a proxy for the respect that this person commands.
5. *Honest Language* indicates positivity and negativity of communication; in e-mail, it is measured through machine learning and natural language processing (Gloor, 2017b) and is indicative of customer satisfaction.
6. *Shared Context* is a measure of the complexity of word usage. It is defined as the information distribution; that is, the more unique words somebody injects into a dialogu, which are subsequently used by other people, the more influence somebody has (Pennebaker, 2013).
7. *Social Capital* measures how many people somebody can reach in two degrees of separation. The more popular friends somebody has, the higher is her/his social capital.

### Design/methodology

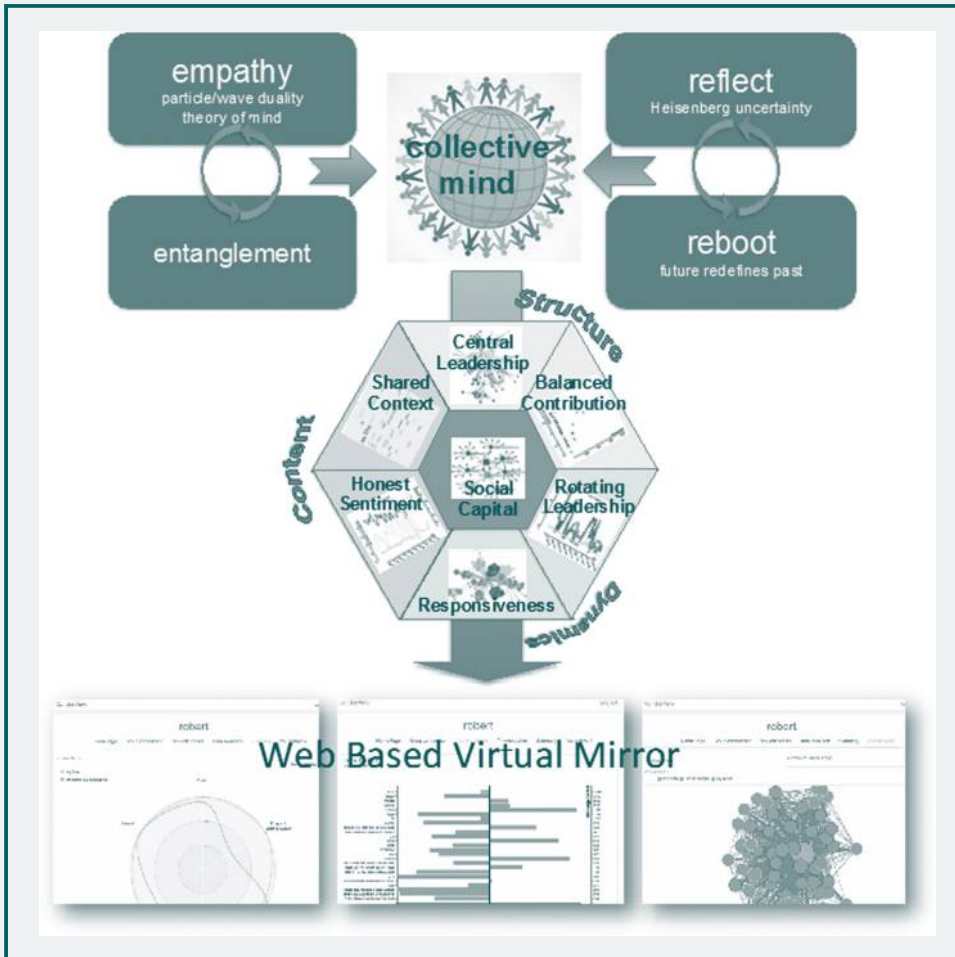
E-mail-based social network analysis creates virtual maps of communication – social landscapes of organizations, similar to Google Maps, which creates geographical maps of a person's surroundings. Google Maps has become immensely useful to the driver for driving not just in unknown territory, but also for finding the fastest way in congested areas the driver knows really well. Even in the town where the driver has been living for a long time and knows her/his way around, Google Maps has become indispensable for displaying through location tracking where precisely the driver is, and where to go next. By aggregating the changes in an anonymous location and tracking information of thousands of drivers, it shows each individual driver where traffic jams and road construction are, guiding them on the fastest way to their destination, and accurately predicting when they will reach their destination.

Online social media analysis tools such as Condor (Gloor, 2017b) provide similar navigation capabilities for the social landscape of individuals and organizations. The aggregated social network map tells individuals the overall social geography of their collaboration network, and informs them how to circumvent potential roadblocks and shortcuts to more efficiently reach their goal. By anonymously comparing their own seven honest signals of collaboration against the team and company average, they will know how they do compared to their peers, and how to change their communication behavior in e-mail, phone, and other online media to be more effective sales people, product developers, or call center employees. For instance, in creative teams, high rotating leadership will increase production of creative ideas, while for sales teams, the opposite, i.e., steady leadership, will lead to happier customers. Similar guidelines apply to the other six honest signals of collaboration. Figure 1 illustrates this entire process of virtual mirroring-based learning.

### Findings

Providing this social navigation information and teaching individuals how to interpret it will allow them to reflect and reboot – giving them guidance how to improve

**Figure 1** Creating the collective mind through virtual mirroring based learning



communication for better collaboration, similarly to how Google Maps allows the driver to drive more efficiently to their destination or quickly orient in unknown territory. Applying virtual mirroring-based learning at various multinational firms has significantly increased their organizational efficiency and performance, for instance increasing customer satisfaction by 18 per cent in a large services organization (Gloor *et al.*, 2017), increasing retention, improving sales forecasts, and increasing satisfaction of call center employees (Gloor, 2017a, 2017b).

This approach opens up novel ways of organizational learning and emergent leadership, where individuals can improve their communication behavior in an environment respecting individual privacy, while building a collective mind. To address concerns of individual privacy, the guiding principle is to give individual information to the individual and provide aggregated information to management without identifying the individual, just like in Google Maps the individual person responsible for a traffic jam is not identified.

Virtual mirroring-based learning offers a unique way of creating collective awareness within an organization by empowering the individual to take corrective action aligned with collective action, and improve their own communication behavior through analyzing and visualizing their own e-mail archive in novel ways. At the same time,

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development,  
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virtual mirroring gives strategic insight to management on improving organizational culture. Recently, a Fortune 500 company introduced virtual mirroring-based learning at their headquarters, creating e-mail-based social networking maps for virtual mirroring for managers and employees. Showing a pattern of the past allows each person to see a complete view of the present social landscape in a way they have never seen it before, which permits them to become better social navigators in the future.

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