

4th International Conference on Leadership, Technology, Innovation and Business Management

Organizational Change via Social Hubs: A Computer Simulation Based Analysis

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Abstract

Organizational change is a risky and challenging endeavor for any type of organization. There are many aspects to change management and one important aspect is persuasion. Persuasion helps to implement a successful change management program. A social hub is person who has social ties to many other people compared to most people. In popular culture, this type of person is also called a popular person. In organizations, there are popular employees who are in fact a social hub. These employees have influence on other employees and they can persuade others towards a particular belief. In this paper, we investigate the role of persuasive social hubs for organizational change. We believe persuasive social hubs can be used to achieve organizational change. In social studies, it is hard to replicate conditions and isolate certain factors. Therefore, in this paper, we benefit from computer simulations and isolate the effect of persuasion by stabilizing all other factors. Our analysis revealed that using social hubs increase the chance of success in organizational change.

Keywords: Change Management, Organizational Change, Social Hub, Persuasion, Change, Computer Simulation, Popular Employee, Organization

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Peer-review under responsibility of the International Conference on Leadership, Technology, Innovation and Business Management

1. Introduction

How to handle change in organizations is still far from being a solved problem. Many researchers are actively investigating various aspects of change management related issues. As organizations evolve, change related issues evolve as well. Peter F. Drucker points out that the large knowledge organization is the central reality (Drucker, and Wilson 2001). As the number of organizations composed of knowledge workers increase, handling change will not be as easy as changing the work procedures for blue collar workers.

There are various studies investigating the nature and success of change projects for software developing and other organizations. (Passos, Dias-Neto, Barreto, 2013; Mathiassen, Ngwenyama, Aaen, 2005; Sirkin, Keenan, and Jackson, 2005; Moitra, 1998; Stelzer, Melis, 1999).

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Garvin and Roberto (Garvin and Roberto, 2005) investigates change through persuasion. According to Garvin and Roberto, “leaders can make change happen only if they have a coherent strategy for persuasion”. Following Garvin and Roberto, in this study, we would like to investigate and propose models of persuasion to successfully implement change. This study is actually a precursor and preparation for our upcoming research studies investigating the how social hubs and persuasion plays a role in organizational change. Therefore, at this point in our research, we are actually more interested in formulating questions rather than providing answers to hard questions.

A key concept integral to our study is the concept of “social hub”. Our definition of a social hub is as follows: A social hub is a social persuasive employee with many friends in the organization. He or she is an employee who can easily persuade other employees in the organization. A social hub has strong social skills therefore her or she has many friends in the workplace. Simply, a social hub is one of the popular employees.

A social hub is not actually a new term. It is used with slight different definitions in various disciplines. Emanuel Rosen categorized social hubs and investigated their role in spreading news and hubs in his book “Anatomy of Buzz” (Rosen, 2001). An emerging technique in marketing is called “mouth-to-mouth marketing” that benefits from concepts such as social hubs.

Our definition of a social hub creates a person that is actually a mixture of Malcolm Gladwell’s definition of a connector, a maven, and a salesman (Gladwell, 2006). Gladwell states, what is called as The Law of the Few, “The success of any kind of social epidemic is heavily dependent on the involvement of people with a particular and rare set of social gifts”. According to Gladwell, these people with a particular and rare set of social gifts are connectors, mavens, and salesmen. A connector is a person with many acquaintances. A maven is an information specialist connecting us with new information. A salesman is a persuader, a charismatic person with a strong skill for negotiation.

In this study, we used computer simulations to investigate the validity of our proposal for organizational change. Using computer simulations for social theories and studies is rather new approach even though the first examples date back to 1960s. (Gilbert, and Troitzsch, 2005). One of main purposes of using computer simulations in social studies is to obtain a better understanding of various phenomena in the social world. The topic is widely discussed in various literature (Gilbert, and Troitzsch, 2005; Davidsson, 2002;).

The rest of the paper is organized as follows. In the second section, we explain different organizational change approaches for our models. In the next section, we detail the design of our simulations. The fourth section summarizes our analysis on the results. The last and fifth section includes our conclusion.

2. Organizational Change Models

For our study, we identified four different organizational change approaches. We modeled each of these approaches. Models enable us to investigate complex issues while keeping focus on the topics under research. Naturally, there are assumptions enabling us to reduce the complexity of change management related issues. Our focus is organizational change through persuasion.

Our models consist of certain concepts. These concepts are explained briefly below:

Organization: The organization referred in our models can be any type of organization subject to change. It can be a government, a commercial, or a non-for-profit organization. In principle, the size of the organization can be of any size. However, very small and very large scale organizations may be subject to very different assumptions. Therefore, staying on the safe side, we preferred to model medium scale organizations. In our models, there are 100 employees in the organization including management.

Change: In our experiments, change is modeled in a very simplistic way. Since the focus of our study is organizational change through persuasion, naturally our models revolves around the concept of persuasion. We believe organizational change occurs when the number of employees in the organization persuaded for change exceeds a certain threshold. Since we normalize the results of our simulations, where this threshold is set is outside the scope of

this study. Our focus is on the comparative analysis of organizational change approaches. We simply investigate which approach provides a better outcome.

Persuaders and Persuadees: In our models, the organization consists of two types of employees. The first type is an employee or a group of employees responsible for making change happen. We simply call this type as “a persuader or persuaders”. When organizational change is needed or required, persuaders persuade other employees for organizational change. Therefore, the second type of people in our organization is the employees that are subject to persuasion for change. We simply call this type as “persuadees”. As expressed earlier, in the models when enough number of persuadees is persuaded, change occurs.

Persuasion: As noted earlier, persuasion is the key method for making change happen in our models. Persuaders may persuade other employees with many different approaches sometimes with a combination of these approaches. These may include training, seminars, installation of various procedures, using certain motivators, or simply by talking. Different types of organizations may respond differently to any of these approaches. Every organization should have the responsibility of identifying which method works best for themselves. In our models, every employee has a certain persuasion capability and a level of openness to change. We model the persuasion level of an employee as the multiplication of the persuasion capability (Conger, 1998; Cialdini, 2001) of the persuader and the level of openness to change (Wanberg and Banas, 2000; Chawla and Kelloway, 2004) of the persuadee or in other words the employee subject to organizational change. If the persuasion level of an employee exceeds a certain threshold, we simply state that the employee is persuaded for change. Finally, if the total persuasion level of employees exceeds the threshold set for organizational change, then we infer that the organizational change occurred.

The assumptions related to this study are listed as follows:

Assumption 1: Persuasion is the only method used for change in the models.

Assumption 2: Except persuasion all factors regarding change stays the same for the approaches subject to this study.

Assumption 3: The persuasion capability and the level of openness to change of the employees in the organization have a normal distribution.

Assumption 4: Only one-way positive persuasion between persuaders and persuadees occurs. One-way positive persuasion means that persuaders only try to persuade the other employee for the benefit of the change.

Assumption 5: The effort and the duration required for change are not factored in the models.

In our study, the models differ from each other based on how the persuaders are selected. This is important since the persuaders affect the success of the organizational change.

Model 1: The manager of the organization tries to persuade all the employees in the organization.

Model 2: There are department heads or managers in the organization. Naturally, there are employees working in these departments. The department managers try to persuade the people in their department.

Model 3: In this case, the organization benefit from the social hubs in the organization. These social hubs try to persuade the people that are socially tied to the respective social hub. To simply the model, we assume that one employee is connected to only one social hub.

Model 4: This case is a specially modified version of case 1. In this case, the most charismatic and persuasive employee of the organization is selected as the leader and manager of the organization. This is actually a reference case for discussing the other cases.

2.1. Organization Manager as the Persuader

In this model, the manager of the organization tries to persuade all the employees in the organization. Figure 1 depicts this approach.

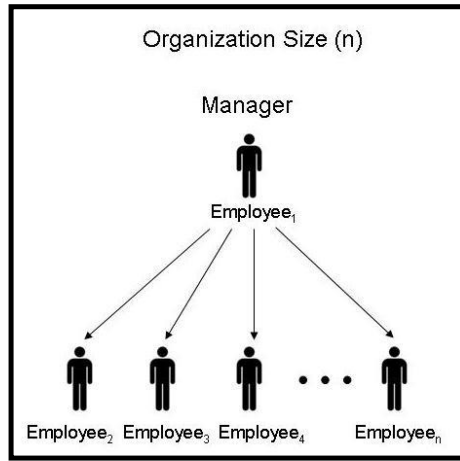


Figure 1. Organization Manager as the Persuader

2.2. Most Persuasive Employee as the Persuader

This model is actually a special case of the organization manager as the persuader. In this model, the most persuasive employee of the organization is selected as the manager of the organization. Then, this manager tries to persuade all the employees in the organization. In most cases, this manager is a charismatic strong leader of the organization and employees of the organization would be happy to follow this leader. Figure 2 shows the organizational model.

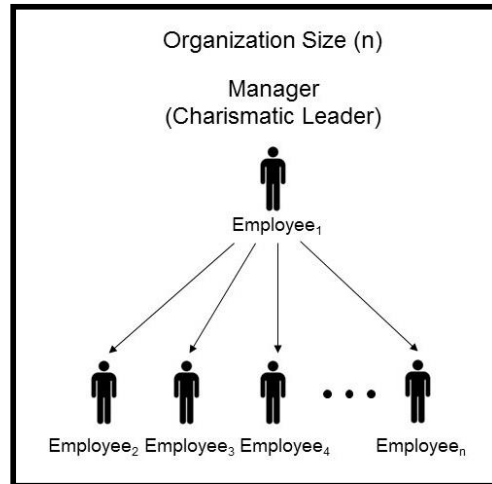


Figure 2. Most Persuasive Employee as the Persuader

2.3. Organization Department Managers as the Persuaders

In this model, the organization department managers try to persuade all the employees in the organization. The organization manager does not play a role in this approach. The burden for change rests upon the department

managers. Naturally, in this case all department managers believe in the benefit of the change and therefore they are the persuaders. Figure 3 presents the model.

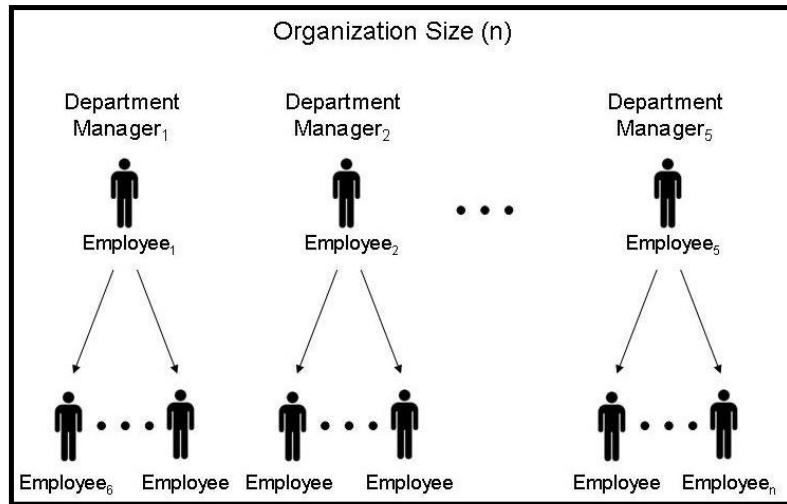


Figure 3. Organization Department Managers as the Persuaders

2.4. Social Hubs in the Organization as the Persuaders

In this model, the social hubs of the organization are used in creating the change. They persuade their coworkers within their respective hubs. Figure 4 illustrates the model incorporating social hubs in the organization.

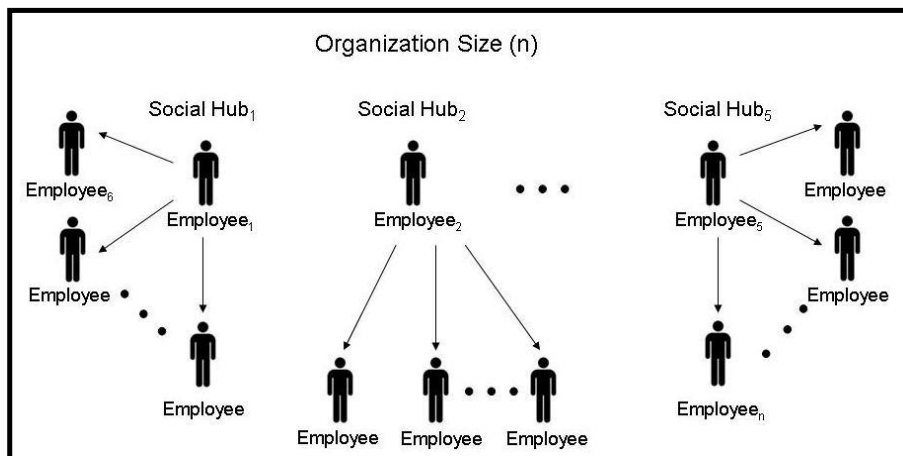


Figure 4. Social Hubs in the Organization as the Persuaders

3. Computer Simulation Design

Based on the models for change, we designed computer simulations. The organization size is 100 employees including the manager. Normal distribution is used for characterizing the persuasion capacity and the level of openness to change of the employees in the organization.

The tool used for creating simulations is MATLAB, a well-known tool with extensive mathematics software libraries. Any simulation tool can be used for simulating the models as long as they are considered suitable for these kinds of studies.

We ran 1000 simulations for each model with the same assumptions and configurations.

The computer simulations are created using the following steps:

- Step 1: Create an organization with 100 employees.
- Step 2: Using normal distribution, every employee is assigned with a persuasion capability score.
- Step 3: Using normal distribution, every employee is assigned with a level of openness to change score.
- Step 4: Depending on the selected approach, the persuaders are selected.
 - Step 4.1: If the “Organization Manager as the Persuader” approach is selected, a random employee is chosen as the manager of the organization. The persuasion of other employees is the responsibility of this manager.
 - Step 4.2: If the “Most Persuasive Employee as the Persuader” approach is selected, the employee with the highest persuasion capability is chosen as the manager of the organization. The persuasion of other employees is the responsibility of this specially selected manager.
 - Step 4.3: If the “Organization Department Managers as the Persuaders” approach is selected, five employees are chosen randomly. These employees are thought to be the department managers in the organization. The number of employees in the departments is distributed evenly. The persuasion of other employees is the responsibility of these department managers.
 - Step 4.4: If the “Social Hubs in the Organization as the Persuaders” approach is selected, five employees with the highest persuasion capability is chosen as the persuaders. These are the social hubs in the organization. The number of employees for each hub is distributed evenly. The persuasion of other employees is the responsibility of these social hubs.
- Step 5: The effectiveness of persuasion activity is calculated by multiplying the persuasion capability score of the persuader and the level of openness to change score of the persuadee.
- Step 6: Previous step is repeated for each employee in the organization.
- Step 7: The change potential of the organization is calculated by adding all the scores of persuasion activity effectiveness. This sum represented represents the change potential of the organization.
- Step 8: The previous steps is repeated for each simulation.

The results of the simulations are recorded. Then, the results are normalized to create simple plots to be analyzed in depth. The next section summarizes the details of our analyses.

4. Analysis

Figure 5 summarizes our findings as a plot of our simulation results. Each model is listed in the horizontal axis. The vertical axis is the change potential. The results of simulations are normalized to the scale of 0 to 1. The average of change potentials are denoted with a dot. The dispersion of simulation results are also presented in the figure.

Our initial analysis reveals that a strong leader has the best potential for creating organizational change. History reports the extraordinary changes created by such strong and charismatic leaders. However, such strong leaders are rare. Moreover, the success of change attempts by these types of leaders is also closely affected by circumstances.

When social hubs in the organization are used for organizational change, the change potential is considerably higher than the other two alternative models, “Organization Manager as the Persuader” and “Organization Department Managers as the Persuaders”. Based on the simulations, it is observed that the change potentials for these two models are similar. The only notable difference is in the dispersion of simulation results for the two models. In some cases, “Organization Manager as the Persuader” model has a better chance for a successful organizational change. In addition, in some cases, the results are poorer than the “Organization Department Managers as the Persuaders” model. This is the result of variability in the organization manager’s persuasion capability. In the “Organization Department Managers as the Persuaders” model, some of department managers do a better job in persuading, therefore the poor performance of other department managers are evened out. Thus, the dispersion in the simulation results is less compared to the “Organization Manager as the Persuader” model.

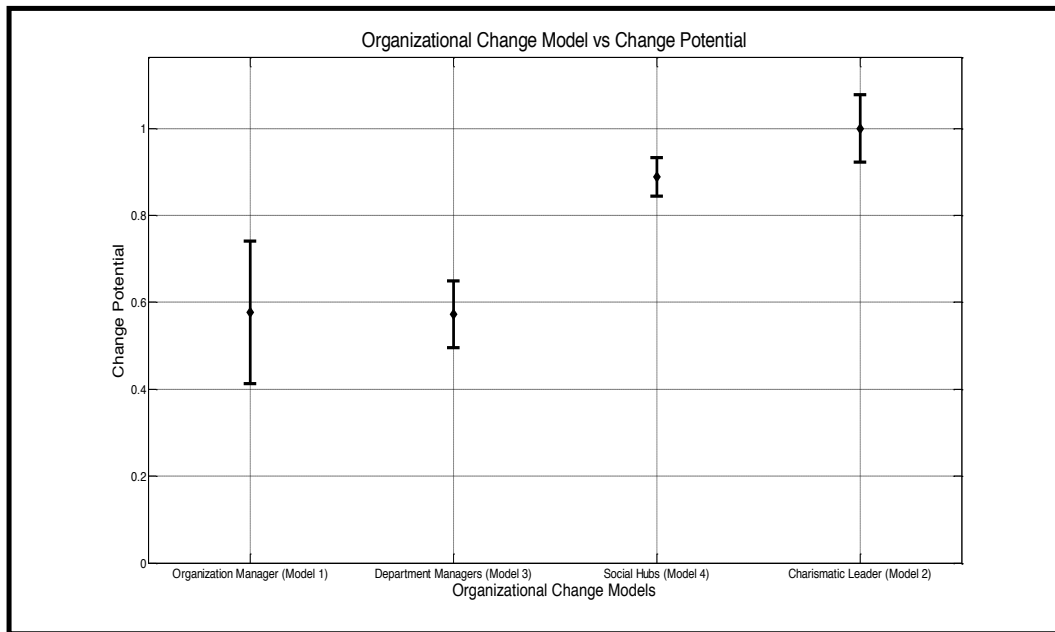


Figure 5. Change Potential for Each Model

5. Conclusion

Social hubs are a natural phenomenon. Social hubs will exist in organizations whether they are clearly recognized or not. They may have some positive and some negative effects on the dynamics of the organizations. We believe we may benefit from such natural informal groupings within the organization especially for change management.

Our belief is that focusing on social hubs will provide another view of organizational hierarchy revealing a different social structure. There is a formal structure in an organization defined by the hierarchical structure of jobs. Another informal structure exists in the forms friendship and social structure.

Our initial analysis showed that utilizing social hubs for change management has the second highest potential for achieving change. The first one is having a very strong, charismatic leader as the manager of the organization. However, such leaders are not easy to come by. Therefore, we propose using social hubs inside the organization for organizational change. Our study shows that “Social Hubs in the Organization as the Persuaders” is a promising approach.

It is important to note that it is always possible to extend how change is modeled. However, we should be very careful if our models become too complex since it may lead to very different conclusions. As a result, we prefer a step by step increase in complexity of models for further studies.

We conducted this research as a precursor and foundation for our research work. Therefore, in this research, we used computer simulations to test the validity of this promising approach. We identified the following research questions.

- a. How do we identify the social hubs in an organization?
- b. As stated earlier, our definition of a social hub creates a person that is actually a mixture of Malcolm Gladwell’s definition of a connector, a maven, and a salesman. Which approach is better?
- c. What are the personality traits and characteristics of a social hub?

- d. A common tool used for measuring psychological preferences in how people perceive the world and make decisions is Myers Briggs Type Indicator (MBTI) (Myers, 1987; Myers, and McCaulley, 1988; Quenk, and Hammer, 1998). Is it possible to identify social hubs by the use of MBTI or other similar assessments?
- e. What kind of persuasion activities can be used for organizational change? How do we model such persuasion activities to increase the validity of the models?
- f. How the duration of persuasion activities affects our models?
- g. In general, how do we relax the assumptions of our study?

6. Limitations and Opportunities for Future Research

Naturally, this study is based on computer simulations of change with modeled organizations. The next step in this line of study is conducting survey studies on organizations. However, we have to note that this is clearly a hard study. Since, finding or recruiting organizations that may want to follow the change models presented here will be a hard task. Additionally, it will be nearly impossible to replicate the studies with all the other change related factors remains the same.

Based on the identified research questions, we plan to refine our models and moreover propose new models. The next step in developing the model would be investigating how organizational change is affected when there are opposing ideas to the change in some of the social hubs. So, the organizational will consist of social hubs who are proponent of the change and opponent to the change. In addition, some of these social hubs may be strong supporters of the change or strong opponents of the change. The models may include these concepts as well. How the change is affected depending on the strength of the support from social hubs will be another research question.

Naturally, there will be a cost of the desired organizational change. A cost model may be incorporated to the organizational change model. The cost may be in the terms of money, workload, and infrastructure. In addition, there will be social costs to the organization. This cost model may include all the listed aspects. For example, if the costs are too high, the managers may change their position on the idea of organizational change.

A main research question in this line of study is the identification of social hubs in organizations. There are studies on how to identify social hubs in online social networks existing on the internet. These studies may shed light on the question of identifying social hubs in organizations. Furthermore, there may be differences on the characteristics of these two different social hubs. A research study may focus on these differences and the reasons.

Investigation of the personality traits and characteristics of the social hubs in organization may be the next step in this line of research studies. The common set of personality traits in social hubs may provide insightful improvement opportunities on human resource management practices.

This study is actually providing us a good set of research ideas and questions for the future. Philosophically this adds value to the study.

7. Acknowledgements and Disclaimers

The views and conclusions contained herein are those of the authors and should not be interpreted as necessarily representing the official policies or endorsements, either expressed or implied, of any affiliated organization or government.

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