

Fallacy of “Decomposition”: Cooperation rather than Competition inside Organizations

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Abstract

In general, competition in markets stimulates companies to survive and make better products at lower cost. Through this process, effectiveness is increased and innovations happen. These results are also desired inside companies and other business organizations. Therefore, many organizations introduced a competition mechanism into their organization inside. However, the expected good results have not always appeared. Competitions inside are not magic wand to make people employees. Indeed, workers have been stimulated in some contexts and some of them have improved their performance eagerly. Nevertheless, the performances of whole organizations have often failed to elevate. This paper shows that cooperation inside is more important than competition inside. System dynamics models and simulation results in this paper explain that macro mechanism, like a markets' one, cannot be employed as micro mechanism. This kind of mechanism import failure should be called fallacy of “decomposition.”

Keywords: competition, cooperation, promotion, human resource, quality management

1. Introduction

Currently, global and national markets in most developed countries are working well. Participants in these markets compete with each other, and they refine their products and services to more attractive and functional. In order to survive, they also improve their business processes and cost structures. As a result of these activities, companies and people earn money and sometimes experience innovations.

Some companies and people believed these good effects can appear not only in markets, or out of organizations, but also organizations inside. They introduced

competition into their organizations. Employees are compared with each other, evaluated, and ranked. Nonetheless, severe competition might let employees to be protective (Wang, 2004). Protective employees would not be able to do teamwork well.

Thus, one should think about the possibility and effect of competition introduction. Competition naturally gives employees stress. Indeed, Deming (1982) presents 14 points for management, and it argues that management should remove stress from employees (Yoshida, 1995). Deming and his team really improved various kinds of business organizations. This fact put a question whether stressful competitive situation in organization really improve organizations' performances, because organizations consist of people, not machinery.

The reason that ranking employees is stressful is that it leads to job security issues. One ranked lower feels worry about one's job security. Moreover, this worry has two conflicting effects: adhering to a current job and lowering loyalty to a current job.

If employees feel job security is threatened by introduction of competition inside, they would not help their colleagues even when they can do. Trauth (1999) points out the possibility that employees are reluctant to share knowledge in order to protect their professional value. This causes stagnations of whole organization improvement. Each employee can secure their jobs, but their company business would fail although correct loyalty is to keep organizations competitive.

Moreover, the competition is not introduced by employees. Although employees feel worry about it, the introduction and use it as a control means. Employees and prospective employees are in a relatively weak position to express their opinion or, negotiate their working conditions than are the employers (Gayton, 2008). Therefore, the introduction itself can be new stress for employees.

Instead of competition, Yoshida (1995) argues that cooperation should be introduced and emphasized. The supportive or reciprocal atmosphere could encourage employees to share their knowledge (Constant, Kiesler & Sproull, 1994). This could improve every employee's ability. Cohen & Prusak (2001) also explain that providing such opportunities and places, which is "Ba" explained by Nonaka & Konno (1998), means that they "earn their keep as social capital investments" (p. 47).

However, simple introduction of cooperation "systems" is not sufficient. Such systems, mainly called as knowledge management systems, helping information exchange and collaboration sometimes fuel competitions among employees. For example, when the amount of input to the system is used to evaluate employees, competition to input information to the system would happen. And, if there is still a competition, no one would want to offer their know-how to the system because one's information input is not

one's own merit but other colleagues', or competitors', merit. As Bryant (2006) points out, some employees believe that an introduction of knowledge management systems increases knowledge acquirers' power over knowledge holders. It is not important to introduce tools but to make atmosphere in which one can easily help other colleagues. As doing it, correct cooperation works.

Thus, making competitive situation in an organization is not directly led to improve organization's performance.

In this paper, the superiority of cooperation to competition is examined by system dynamics models. These models have no "soft variables," like employees' loyalty or atmosphere in the office. However, groups based on skill levels of employees are focused. Categorizing employees to skill level group means implementation of ranking employees. In this paper, ranking mechanism expresses competition mechanism. Simulation results clearly shows cooperative condition is superior to competitive condition under same circumstances.

2. Models

A fundamental model in this paper focuses on workers' maturity. Of course, it is impossible to indicate one's maturity using one measure because necessary skills are different in various situations and conditions. In the model below, the degree of mature of each worker is not necessarily measured as numerical data. Workers mutually evaluate their skills and put themselves into one of three classes (in the model, A Class is higher skilled workers, C Class is under average skilled workers, and B Class is intermediate between A Class and C Class).

The model supposes two basic scenarios: competition and cooperation. In the competition scenario, workers are always ranked. A Class workers are more productive than B and C classes workers, and B Class workers are more productive than C Class. Some lower class people get skills and promoted to higher classes. Simultaneously, some of higher class workers are demoted to lower class because the ranking system always works and cannot categorize all people into one class. This means ranking system always reshuffles workers. Higher class workers know that other workers' promotion would means demotion of themselves. Therefore, workers do not have active communication beyond the wall of classes in this scenario.

However, some lower class workers can get promoted by acquiring skills. Demoted people still have their own skills. Therefore, after reshuffling, each lower class' average skills are improved.

Because of lower productivity of B and C class, there would be lack of productions. In this case, if A Class workers can produce surplus, A Class cover the lack of B and C classes as much as possible in this research's model. This assumption that A Class workers help others might seem too "generous." However, managers and executives need whole organizations' outputs, not each individual's unique output. Based not on generosity of A Class workers but on the needs of top managements, the assumption is reasonable.

Ranking system is a part of a system to clarify responsibilities of activities and results; one working less suitably must take the consequences by being demoted. This kind of attribution exists in many companies. Repenning & Sterman (2001) show a model explaining that any organization has a system making people attribute undesirable situations to other some people, not to a system around them. Thus, the competitive scenario including ranking system generally exists in real world.

The other scenario, cooperation scenario, also has three classes. A Class workers still help the lower classes' low productivity. Different from the competition scenario, demoted workers no longer work hard and they adjust their productivities to their new classes. This is not strange because wages would be different between classes. In this scenario, however, there is communication beyond the wall of classes. Workers might not be eager to improve their skills in order to keep their competitiveness, system, or circumstances improve their abilities by communications. Morita et al (1995) shows the importance of communication in the real world; communication is activated in world class manufacturing companies. Communication and helping others are keys of cooperation.

These two scenarios' differences are how to keep employees to improve their productivity. The competition model is to make employees face the fear of demotion. In this scenario on this paper, employees keep themselves industrious. But, in more real scenes, people would lose their self-confidence or atmosphere in the job sites would be unfriendly. On the other hand, the cooperation model is to encourage people to communicate their issues and improve their abilities by the whole. These scenarios are translated to a system dynamics model using the procedure in Takahashi (2008). The whole model is shown below (fig. 1) and two scenarios are switched by a parameter "ranking system." The web proceedings contain the model which can run.

Even the competition scenario keeps demoted employees industrious, is it possible to show good performance compare to the cooperation scenario? And even the cooperation scenario allows employees not to improve their skills very hard, is it possible to make good results? Moreover, the impact of innovations should be tested. Following section

show the result of simulations using the model shown in this section.

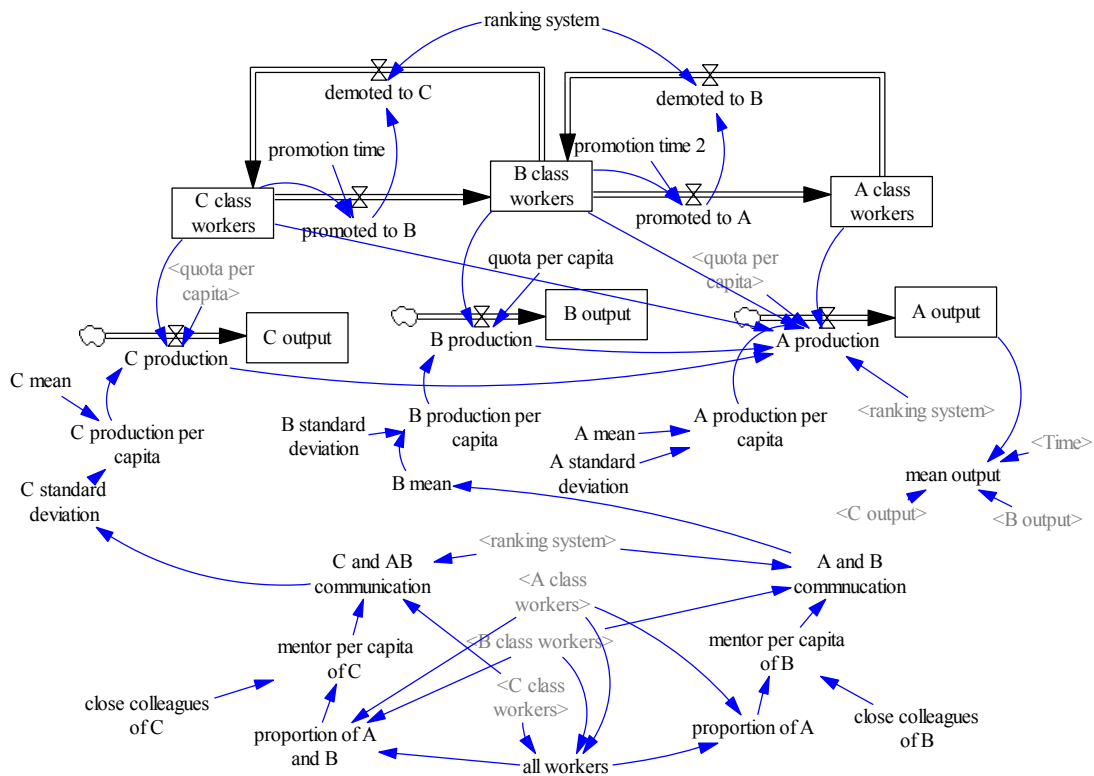


Fig. 1 Whole model diagram containing two scenarios

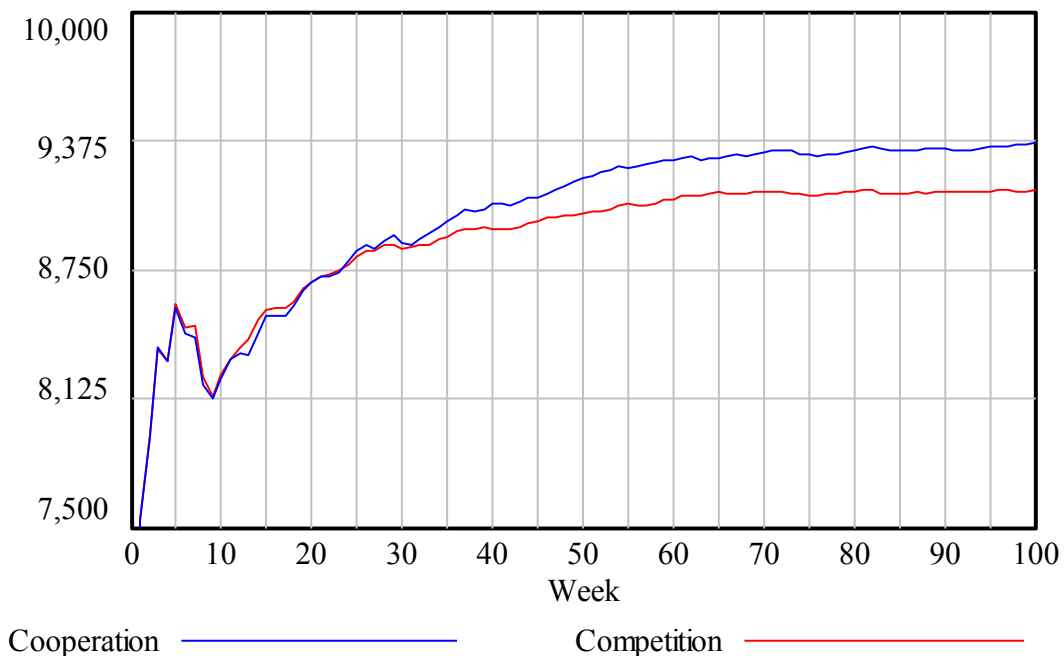
3. Simulations

First, the comparison between the competition scenario in which workers were always ranked and their productivity was kept even when demoted and the cooperation scenario was done. In reality, one would be discouraged and often not display one's full ability. In this case, organizations' whole productivity should be lower than the performance in the scenario in which demoted workers still keep their industriousness. Therefore, if the output of the cooperation scenario shows higher performance than the competition scenario with industrious workers, it is reasonable to decide that the competition scenario with "discouraged workers," more realistic case, would be worse than cooperative scenario.

Both scenarios are supposed that the organization have one hundred workers who are categorized into three classes in regard to their skill levels. All employees are expected to make one hundred units of output every week per capita. The output of each time period varies under the normal distribution. At the beginning, C Class workers can work with less mean (80 outputs per capita) and higher variance (standard deviation

20) and B Class workers can work with less mean (80) and lower variance (standard deviation 10) than A Class workers (average 100, standard deviation 10). Workers are changed their classes over time. In the competition scenario, promoted people are evaluated that they have higher skills than ever. One person's promotion means other's demotion. But, demoted people still have the same level skills as their old classes. Therefore, average skills of C Class and B Class are gradually improved. In the model, improvement in C Class is to decrease variance of outputs, and one in B Class is to increase their average output level. On the other hand, in the cooperation scenario, workers' outputs are supposed output levels at their current class. Thus, there is no apparent improvement mechanism. However, A Class workers make up when B and C Class outputs are less than supposed (one hundred units per capita), if A Class workers' output surplus their norm.

In order to test these scenarios, simulations with various random numbers for each class output are tested. The typical performances of these scenarios are shown below (fig. 2). This graph shows means over time of the output of whole organizations. The cooperation scenario consistently shows higher performance than the competition scenario in regardless of the random number combination.



At the time 0, there is no production so that the value of output is zero.

Fig. 2 Average output of the whole organization

The meaning of the result is that the competitions inside organizations, or competitions between members, are not necessary to achieve organizations' goal. Competitions in the market, or competitions between organizations, promote to increase efficiencies in various aspects. To import this situation into organizations inside directly does not mean the efficiency increase. Rather, cooperative situations would increase whole organizations' performances.

This means that ranking employees is not effective idea to increase productivity of a whole organization. The cooperative scenario does not brand employees classes virtually, although the ability of each employee is different. The difference between skilled and not skilled workers is not obvious because the lack of productivity is covered by skilled workers. This difference is recognized by employees themselves; however, they are not classified by "others," like managers or executives. If employees are classified by others, it leads to worry of job security of employees. Ability ranking can be translated to value for one's organization evaluation. In such a situation, no one would help other colleagues' lack of output; one would pursuit their job securities by making it clear that they are superior to other employees. This can stimulate competitions inside. However, it does not increase competitiveness of their whole organization. Therefore, organizations should choose the cooperation scenario, rather than competition scenario.

The cooperation scenario can seem different from reality. In particular, the story that higher skilled employees always help the lack of output of others might be too idealistic. If lack of productivity of lower skilled people is always covered by high skilled people, lower killed people would lose incentive to improve their abilities. High skilled people would be disappointed if their help was taken for granted.

However, in knowledge workers' case, Wasko & Faraj (2005) report that legal professionals share their experience when they recognise that sharing activities enhance their professional reputations and sharing is one way to maintain the status of a member of these expert societies. This reputation mechanism can be seen in production or service industries. If so, the employees' reciprocal help, or cooperation, can be done spontaneously.

Therefore, managers need to understand the importance of employees' mutual helps and reward people not for making high performance but for helping other members.

In the situation that skills quickly fall behind the time, the cooperation scenario's superiority is clearer. The difference between this situation and the previous model is that A Class workers can be demoted to C class directly because of skills' obsolescence (fig. 3). The model is added new flow from A Class workers to C Class workers; the flow is delayed inflow to A Class workers.

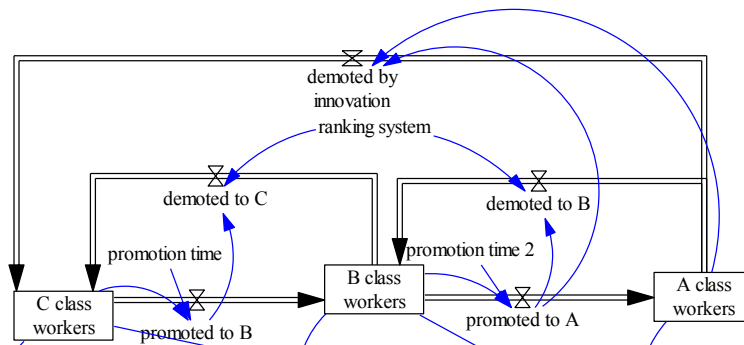


Fig. 3 Added flow is shown on the top

Although the delay length and parameters are randomly changed like the previous simulation, the cooperative scenario's performance is higher than the competition scenario's one in the most term. The graph below is one of typical time series of average outputs.

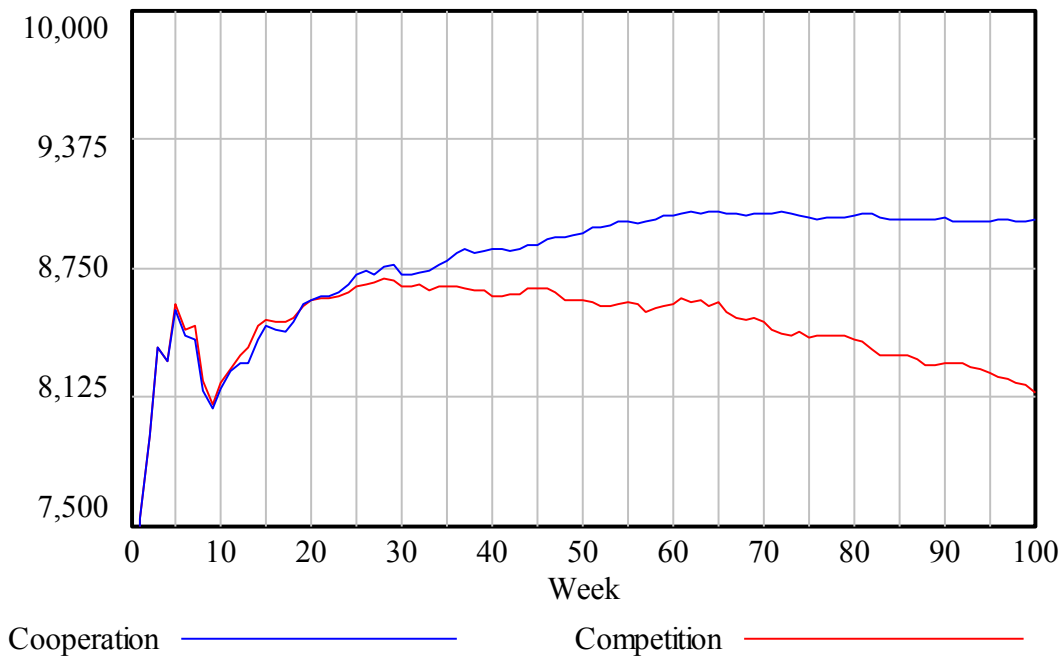


Fig. 4 Average output of the whole organization

In this paper, the example case is based on production companies. However, employee ranking can be also seen in other business areas. Ranking is one of means of control. Too tight control over employees is often ineffective to increase whole organizations' performance. Similar situation in knowledge management contexts is shown in Takahashi (2010).

4. Conclusion

In order to increase and keep efficiency of economic activities, competitive markets are recognized as a good, or often only, system. Competition can give chances to newer or innovative ideas and make obsolete ones out. Therefore, one would attempt to introduce competitiveness into organizations inside; organization members would be forced to face competition each other. The reason to make organizations must make the organizations efficient to cope with competitors in markets, not make a battling field inside. Nevertheless, introduction of competitions inside without any care is sometimes regarded as also efficient way to bring about efficiency and competitiveness to employees, similar to inter-organizations competitions.

An important difference between inter-inside-employees and inter-organizations competition is its purpose; organizations need to win part of markets at least that they can run their business, but employees do not need to “wipe” their colleagues from their workplaces. Rather, employees should cooperate with each other in achievement in their business purposes.

This paper showed the structures of “competitive workplaces’ situation” and cooperative workplaces’ situation.” The competitive situation incessantly forces employees to face competition. Employees are always classified; one’s promotion means other one’s demotion. There is no interaction so that the learning and covering for colleagues are not brought about. On the other hand, the cooperative situation let employees interact and skilled ones cover other one’s deficit.

The competitive situation means employees become “losers” in turn. This might be comfortable situation only for “always-winner.” In reality, however, such people would be very minority, because such people would go out to other better-paid jobs.

Competitiveness in the market in which business organizations compete with each other is working well in reality. However, the idea that competitive is always effective so that inside employees should be thrown into the competitiveness is “fallacy of ‘decomposition.’” Managers should be cautious not to spur employees on to be competitive against others. Rather, managers should keep the circumstance in which employees feel easy to cooperate with each other. What to be competitive is an organization.

Acknowledgements

This research is supported by The MEXT (Ministry of Education, Culture, Sports, Science and Technology, Japan) Programme for Strategic Research Bases at Private Universities (2012-16) project "Organisational Information Ethics" S1291006.

References

- Bryant, A. (2006). "Knowledge management: The ethics of the agora or the mechanisms of the market?" In K. VanLehn (Ed.), *Proceedings of the 39th Hawaii International Conference on System Sciences* (pp. 144c-144c). Washington, DC: IEEE Computer Society.
- Cohen, D., & Prusak, L. (2001). *In good company: How social capital makes organizations work.* Cambridge, MA: Harvard Business School Press.
- Constant, D., Kiesler, S., & Sproull, L. (1994). "What's mine is ours, or is it? A study of attitudes about information sharing." *Information Systems Research*, 5(4), 400–421. doi:10.1287/isre.5.4.400
- Deming, W. E. "Out of Crisis." MIT Center for Advanced Engineering Study, 1982.
- Gayton, C. M. (2008). "Business ethics, restrictions on employment and knowledge management." *VINE: The Journal of Information and Knowledge Management Systems*, 38(2), 174–183.
- Morita, M., Tanaka, N., Mori, H, & Takahashi, Y. "Communication network systems for competitiveness: the Japanese world class manufacturing case." *Proceedings of International Conference of System Dynamics Society*, Vol. 1, pp. 150–169, 1995.
- Repenning, N. P. & Sterman, J. D. "Nobody ever gets credit for fixing problems that never happened: creating and sustaining process improvement." *California Management Review*, Vol. 43, No. 4, pp. 6–88, 2001.
- Takahashi, Y. "Dynamic simulation modelling using descriptive information in natural language." *International Journal of Simulation and Process Modelling*, Vol. 4, No.3/4 pp. 215 – 222, 2008
- Takahashi, Y. "The Importance of Balancing Knowledge Protection and Knowledge Interchange." In "Ethical Issues and Social Dilemmas in Knowledge Management: Organizational Innovation" IGI. Ed. by G. Costa. pp. 180-198, 2010.
- Trauth, E. M. (1999). "Who owns my soul? The paradox of pursuing organizational knowledge in a work culture of individualism." In R. Agarwal & J. Prasad (Eds.), *Proceedings of the 1999 ACM SIGCPR Conference* (pp. 159-163). New Orleans, LA: CM Press.
- Yoshida, K. "Revisiting Deming's 14 Points in Light of Japanese Business Practices."

The Quality Management Journal, 3(1), pp 14-30, 1995.

Wang, C.-C. (2004). "The influence of ethical and self-interest concerns on knowledge sharing intentions among managers: An empirical study." *International Journal of Management*, 21(3), 370–381.

Wasko, M. M., & Faraj, S. (2005). "Why should I share? Examining social capital and knowledge contribution in electronic networks of practice." *Management Information Systems Quarterly*, 29(1), 35–57.