ROLE OF SCIENTIFIC LEADERS IN R&D ORGANIZATIONS

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Abstract:

Weakness actually observed in R&D organizations in our country is partially due to the excess of administrative heads and the shortage of scientific research leaders. In order to address this situation it is necessary to promote the role of leading scientists in R&D organizations. The measures to be implemented would be the set up of competitive environment for research staff to express capacity and assume responsibility, clear definition of functions and tasks of scientific organizations and leading scientists as well as practical links between leading scientists and staff under their management.

1. Problems posed by practical activities

The weakness actually observed in effectiveness of R&D organizations in our country has sources from many reasons including the following factors:

- Strong intervention of administrative relations in R&D activities. From view of scientific research, these links, at the same time, are too tough and too loose;
- Capacity and potential of scientific researchers and research organizations are not yet promoted properly. They are not encouraged, mobilized and the potential remains untapped;
- Largely spread investment does not let carry out focused and expected research programs which are classified as feasible and promising, of scientific purpose and practical use, under organization and management of highly qualified and credible scientists;
- Unclear charge sharing relation between research directors and project hosting organizations. There exist cases where the collective voice dominates individual scientists or the reputation of scientific organizations gets damaged when headed by unqualified persons;
- Assessment for setting up, maintaining and evaluating the capacity of R&D organizations is, in many cases, based on the volume of personnel

staff and/or administrative position of the heads of organization. This tendency leads to the lack of research orientations in R&D organizations.

These factors present clearly the situation when we experience an excess of administrative heads and a shortage of scientific research leaders and a lack of scientific reputation based relations. It is a new aspect, added to innovation, which requires a new vision to the role of leading scientists in R&D organizations. The promotion of the role of leading scientists in R&D organizations has to become a natural factor to meet the specific environment of scientific research.

The role of individual scientists is found very decisive for implementation of research activities. It is not similar to the specificities of office and business management. Administrative officers, when doing their tasks, execute their functional duties assigned by the State regulations. Similarly, workers are required to do well their range of duties in a limited production-business scope of enterprises.

Naturally the scientific activities today become more collective. This team-work form of scientific research activities gets a dominating tendency since the years 20-30 of the last century. The research work became segmented, namely preparation works, experiments, collection and analysis of received data, and publication of research results. According to Rodney: "Today the talent of outstanding scientists is reflected only through the collective of researchers attached to him. Without these collaborators and assistants, the outstanding scientists risk facing failures despite of his great talent" [1, p.187]. From another side, even in this prevailing tendency, the individual role of scientists cannot be ignored. The typical case is the analysis by Ostvalder who indicated the deciding role of leading scientists in establishment of a research direction. In order to establish a new research direction, not only an outstanding scientist is required but also his strong willing to achieve the targeted goals and the skill to transfer his wills, passion and ambitions to his team-mates, colleagues and students.

The clearly determined role of individual researchers permits to apply the management mechanism of strong competition in R&D organizations. From another side, it is necessary to establish a grade system which is different from the one applied in production-business enterprises. The grade system in production-business enterprises is mainly based on positions while the one in R&D organizations takes into account the scientific capacity and reputation. The grade system applied for research management is not compulsorily required to be multiple levels as it is for administrative management system.

In practice the individual role of leading scientists is recognized firmly in many countries. Globally the leading scientists keep important positions and authorities. They operate, in fact, independently in their research direction and indisputably keep the deciding position, even administrative, in his scope of research activities (having certain authorities for budget allocation of activities or selection of collaborators). In addition, the official posts of leading scientists in some R&D organizations are fixed by the number of professor positions they can confer.

In Vietnam many research organizations wish to raise the role of leading scientists. The author of this paper had interviewed and exchanged the view with 50 research institute directors and 42 of them affirmed the high role of leading scientists (some of them propose also the term of "key scientists" to underline the role of these scientists) in R&D organizations. Namely they have the following concepts:

- Leading scientists should be exclusively powerful in organization of research operations in his scope of activities, namely determination of research orientations, recruitment of staff and use of allocated budgets;
- The permanent status should be applied for leading scientists in State owned R&D organizations. The arguments for this are: i) this regulation is not only incentive advantages for leading scientists but also a binding measure to keep talent researchers for interests of these R&D organizations, and ii) the permanent status would offer a long vision for development of veritable talent scientists;
- The number of leading scientists in R&D organizations may vary from one to three for every narrow research sector (which can be identified by the sector code definition by the Ministry of Education and Training). The argument of the first group for a single leading scientist in R&D organizations wants to confirm the particular individuality but not the collectivity of highly qualified researchers. The special status of absolute authority should be assigned to a veritably talented scientist. But the problem is that this type of highly competent scientists is not largely available in our country now. The argument of the second group for a tandem of leading scientists in R&D organizations is based on the necessity to prevent the monopoly trends and to couple an aged and experienced scientist with an ambitious young scientist, who are to compensate each other. A leading team of three scientists is not necessary, it is difficult to find three scientists and makes power weaker. The argument of the third group for triple leaders underlines the importance of alternating power execution when one of them needs to focus time and efforts for special projects. In fact, a leading team of

three scientists is a good anti-monopoly tool in management. The argument of the fourth group is for a transition period from the triple leaders to the single leader. This transition period is necessary to pass from the long year practice of collective management to the full authority and responsibility of a single leader;

- The interviewed research institute directors proposed various criteria for selection of leading scientists. They are, in top-down order, namely:
  + High qualification and reputation for scientific research reflected in high grade of titles (doctor, associate professor, professor) and the number of published research works;
  + Capacity of organization and management of research works;
  + Practical capacity, combination of long year experiences and talent, high credibility, political maturity, exemplary motivation for scientific research.

For the actual situation, the majority of interviewed directors confirm the gap between the *required number* and the *available number* of such leading scientists. For example, as the surveys show, in a hospital the numbers are 10 and 5 respectively, in a research institute of the Ministry of Transport the numbers are 10 and 1, in a research institute of the Directorate of Fisheries the numbers are 30 and 20, in a research institute of the Ministry of Agriculture and Rural Development the numbers are 15 and 5.

- The directors of institutes are unanimous in the point of view that the leading scientists would be selected by councils of reputed experts. Some directors propose the selection through examinations;
- Some directors strongly suggest a gradual implementation of special authority system of leading scientists. This process requires a proper arrangement of relations between administrative heads and leading scientists. In addition, leading scientists need also to have skilled secretaries or assistants.

The new relations have appeared in some research institutes already with various levels. The authority of directors of research units and directors of projects extends. In some cases they are authorized to recruit their own staff, appoint their deputy assistants, send their staff to education courses, decide the salary for their staff, cancel the job contracts, etc. In fact, the heads of institutes remain to complete only the administrative formality. But globally the heads of institutes still keep the overall control functions in personnel management to avoid the abuse and wrong application of assigned authorities. Some regulations are implemented to protect the rights and

benefits of staff. In these cases the separation between administrative management and research activity management is observed effective. In some cases the authority assigned to directors of projects prevails. The administration management unit carries out only some formality works related to (i) recruitment contract signature, (ii) use of materials and equipment, (iii) labor regulations. As result, the model of scientific collectives gets formed. This soft mechanism turns to be more useful in offering more effective coordination between research teams, at the same time, a person could take part in more than one research team.

2. Recommendations

The practice and the applied models from grass-root level explore so well the necessity and possibility to apply the new mechanism to enhance the role of leading scientists in R&D organizations. In order to promote this model the particular attention should be focused on the following aspects.

1. The individual role in S&T activities of R&D organizations is promoted through two aspects: ***competition*** for researchers to explore and apply their capacities and potential to keep proper positions; and ***differentiation*** to find out the most suitable leading scientists who can contribute for institute and country. The competition and the differentiation together will promote the development of research collectives. Naturally this model can be applied on basis of suitably established norms and standards of assessment and classification.

Actually we still keep a multi-grade system of scientists including research assistant, researcher, senior researcher, lecturer, senior lecturer, associate professor and professor. But this system is based hardly on administrative management concepts then impossible to promote the fair competition and clear differentiation process[1,2] [5, p.20]. In the new approach of management, we try to provide researchers with necessary conditions[3] for mobilization of their capacities and contributions for the society.

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1 Pham Duy Hien said that: "...Unlike other advanced countries, our science is too blind because our reseachers are so weak, they can not distinguish "light" and "dark". Other reason is a virus of "false and corrupt" which spreads of environment. We are lack of resistance, we need a thoughtful human resource strategy, skilled leaders and a standard framework for reseachers to strive".

2 "In our actual salary system, the positions and titles are coupled with benefits. In the field of scientific research only a few researchers can keep the administrative duties and research charges. The majority of researchers take care and are motivated only for research. Therefore the scientific titles (not related to administrative management) are measures to mitigate the trends of "administralization" scientific researchers while we need their capacities for laboratories".

3 "Many documents of the Party and the State emphasized the necessary working conditions for scientists. But these conditions are understood mainly as the ones for individual scientists".

3. The success of a leading scientist is evaluated by two coherent indicators: his actual contributions for scientific development and the number of researchers he makes involved and trained in his activities. Therefore in addition to research capacities, the leading scientists are required to have association skills and quality. The image of "ideal leading scientists", as established by Soviet researchers, gathers 5 groups of quality, namely: research capacity, socio-political awareness, organizational-professional level, educative skills and personality-ethics nature [3, p.326-328].

4. As measure to control the bureaucratic tendency (which exist around the world) between leading scientists and other researchers under control [2, p.189-190; 4, p.78-79], it is necessary to enhance the mobility and competition of researchers.

The world's experience shows that it is necessary to create a competitive environment for researchers, particularly for young researchers, to mobilize their personal potentials. Even in some countries with traditional high respects for seniority and age the new chances are opened largely for promotion of young and ambitious researchers. This tendency is observed largely in Japan [7, p.333]. The similar application is observed also in China where they build up a system of use of human resource based on competition as core element. The young talented researchers are selected, supported and trained to become leaders in short time [8, p.32].

Expectedly, with the enhancement of the individual role of leading scientists in R&D organizations, we can address the actual situation of chaos in management of S&T activities where we experience two conflicting tendencies: excess of administrative heads vs. shortage of leading scientists, excess of titular scientific positions vs. veritable scientific positions, excess of administrative management vs. shortage of scientific activity links, and excess of administrative workers vs. shortage of scientific staff./.

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