

# Decentralization\*

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## **Decentralization**

Decentralization is the act or process of assigning the decision-making authority to lower levels of an organizational hierarchy. When the organization's hierarchy has more than two levels, decentralization is described in terms of its degree. The lower the average level at which decisions are made, the greater is the decentralization of the organization. An organization can be more centralized with respect to one type of decision and more decentralized with respect to another. The *optimal* degree of decentralization with respect to a particular decision is where the decision right is assigned to that level in the hierarchy so that the organizational performance is maximized for the given environment.

### **Conceptual Overview**

Most modern firms are both multi-unit and multi-level organizations. These organizations tend to have a hierarchical structure, which arises naturally when the economic gains from division of labor and specialization are accompanied by the need for managerial coordination of specialized activities. Such division of labor may be carried out in diverse ways, depending on how the sub-tasks are combined into distinct activity modules which can then be assigned to different organizational units. The dividing of tasks may be along functional lines – e.g., Departments of Accounting, Finance, and Production – as in traditional U-form (unitary) organizations. Alternatively, it may be along product lines as in more modern M-form (multi-divisional) organizations [Chandler, 1962]. In either case, a central problem facing a hierarchical organization is where to allocate the decision-making authority. Should the decisions be centralized and made by the CEO at the central headquarters or should they be decentralized and made by the managers of the lower-level units such as departments and divisions?

It is useful to frame the question of centralization versus decentralization by first identifying the features that are central to all human decision making. Human decision making involves three fundamental questions: 1) What is the decision-maker's objective? 2) What are the courses of actions available to the decision-maker? 3) What are the constraints on the available actions as perceived by the decision-maker? In this context, rational decision-making entails choosing, out of all *possible* actions, the one that best meets the objective. The ultimate choice is then determined by two factors. First, the choice depends on *what the decision maker knows* about the environment, since this determines what options the individual perceives as being feasible. This is the "knowledge" factor. Second, the choice is based on the objective of the decision maker, and different decision-makers have different objectives. This is the "incentive" factor. When applied to a multi-unit/multi-level organization with a hierarchical structure, the interaction between the knowledge factor and the incentive factor becomes the main determinant of the organizational performance.

### **Distributed Knowledge and Organizational Decision Making**

No individual is likely to have the comprehensive set of knowledge that is required for different kinds of decisions at all times. However, vast amounts of knowledge tend to be dispersed among multiple individuals in the organization. For example, a manager of a store in a given geographic area may have information that is not available to the managers of other stores or the CEO. The quality of a decision to be made by an individual with the decision authority then depends on the extent to which he or she has an access to the relevant knowledge which may reside in some other parts of the organization. Effective decision making in this context entails collocating knowledge with decision authority. There are two possibilities for achieving such collocation. We may move knowledge to the person with the decision authority or decision

authority to the person with the relevant knowledge. The former is the MIS (Management Information Systems) solution, while the latter is the organizational design solution involving centralization and decentralization.

When there is no cost to transmitting information, and the individuals with unique information have their objectives perfectly aligned with the organizational goals, the issue of optimal degree of decentralization is irrelevant. The information needed for making the best decision will automatically flow to the person making the decision, wherever the decision maker may rest in the organization. As emphasized by Friedrich A. Hayek (1945), however, when the cost of information transmission is positive, the extent of knowledge transfer tends to be limited. In the context of markets versus central planning, Hayek argued in favor of the decentralized market economy over a central planning system. The argument was that the automatic collocation, at the level of the individual consumers and producers, of the decision-making authority and the relevant knowledge confer upon the market its superior capacity to respond to changing environment. His view, as applied to organizations, corresponds to moving the decision right to the location of knowledge, rather than moving the knowledge to the individual with the decision authority.

### **Incentives and the Agency Problem**

The conceptual framework supporting Hayek's view of decentralization was further examined and elaborated upon by Michael Jensen and William Meckling. Jensen and Meckling's work brought the "incentive" factor in the decision making process into the organizational design problem. An agent at a lower level of a large organization tends to have an objective which is different from the one possessed by the CEO of the company. Delegating the decision authority to lower-level manager may then allow them to make decisions that are sub-

optimal from the organization's perspective – this is referred to as the “agency problem” in the literature.

The aforementioned authors identified the “alienability” of decision rights as the market's solution to such control problems. The alienability of decision rights implies that the person with the decision right also has the right to sell such right through a market exchange. The corresponding right to capture the proceeds from the exchange then ensures that 1) the decision rights will go to the ones with better information as they tend to value them more and 2) the market exchange will provide an automatic reward and punishment mechanism for those who possess the decision rights. However, firms generally operate so that the decision-making authorities are transferred internally without the corresponding alienability (which belongs only to the owner of the firm). As alienability is what allows a system to overcome the control problem, the firms must use an alternative set of mechanisms to solve the problem as efficiently as possible while facing the same informational constraint that a market economy faces.

One of the organizational mechanisms Jensen and Meckling considered in this context was again the “allocation of decision rights” – i.e., centralization versus decentralization. In exploring this mechanism, they introduced the concepts of *general knowledge* and *specific knowledge*, where the former refers to the information which is easily transferred between individuals and the latter to that which is non-transferable. In essence, the cost of communicating general knowledge is zero, while the cost of communicating specific knowledge is infinity. Given a fixed amount of specific knowledge located at the lower level of the hierarchy, they then compared the situation in which the superior officer of the firm makes a decision in the absence of this specific knowledge and the alternative situation in which the decision is made by the worker who possesses the specific knowledge relevant for that decision.

The larger the amount of specific knowledge, the lower is the quality of decision making at the top and, hence, the greater the need for transferring the decision right down the hierarchy (Hayek's solution). Counter-balancing this tendency is the conflicting interest between the holder of the specific knowledge and the top of the hierarchy who allocates the decision right. The *optimal* location of decision authority in an organization is then identified as the one that minimizes the total organizational costs consisting of the information cost and the agency cost.

### **Critical Commentary & Future Directions**

Recent researchers have considered models where specific knowledge can be turned into general knowledge with a finite cost via the use of information technology (IT). In this setting, it follows that the exact distribution of specific versus general knowledge within an organization is largely determined by the effectiveness of IT. Thus, some recent researchers have endogenized the MIS solution into the Jensen-Meckling framework, making explicit the cost of turning specific knowledge into general knowledge. The emphasis is on achieving collocation of the decision rights and information through a *combination* of the MIS solution and the organizational design solution. An important question is: Will an IT that enables more effective codification of individually-held knowledge – and thus a reduction in the cost of communication – optimally lead to centralization or decentralization of decision rights?

The reduction in the cost of communication makes vertical transmission of information more effective and, hence, could lead to greater centralization. Counter-acting this tendency are the possibilities of *information overload* and *lateral communication*. As more information previously classified as being “specific” gets transmitted to the top, the binding constraint for the organization becomes not information access, but human limitation on processing information,

which may limit centralization of decisions. Furthermore, the reduction in the cost of communication facilitates not only vertical communication but also lateral communication. Communication between lower units can thereby substitute for communication up and down the hierarchy.

The debate on the trade-offs between these forces goes back almost fifty years, when a conjecture was made by Leavitt and Whisler (1958) that improved IT will lead to a reduction in the number of hierarchical levels with the corresponding disappearance of the middle management and centralization of many important functions. According to a survey article by Crowston and Malone (1988), this prediction is not confirmed by the empirical studies carried out up to the time of their survey. In fact, while some studies were inconclusive, a number of studies showed that the use of IT affects the jobs of workers in production more (through automation) than those in coordinating functions, which implies an increase in administrative intensity and a possible expansion of the middle management.

More recent empirical studies using firm-level data examined the influence of organizational design on the demand for IT and the productivity of IT investments. Brynjolfsson and Hitt (1998) find that demand for IT is greater in firms that have more decentralized decision-making and also invest more heavily in human capital, including training and screening by education. Furthermore, adoption of IT tends to have a greater impact on output in firms that are more decentralized. Hitt and Brynjolfsson (1997) also find that firms with extensive use of IT tend to be more decentralized and rely more heavily on skills and human capital.

In sum, the optimal degree of decentralization in a hierarchical organization is a function of both the knowledge factor and the incentive factor. The organizational manipulation of these two factors requires a combination of the MIS solution – i.e., moving the knowledge – and the

organizational design solution – i.e., moving the decision authority. While the recent empirical research appears to support the hypothesis that the drop in the cost of MIS solution induces the organizations to opt for greater degree of decentralization, the debate continues.

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*See also* Hierarchy, Information and Communication Technology, Organizational Economics, Organizational Structure, Ownership and Control

### **Further Readings and References**

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