

Laszlo Zsolnai  
Corvinus University of Budapest  
Hungary

## **Identifying and Solving the Right Problem by Using Multidimensional Systems Thinking\***

### **Abstract:**

It is a serious failure of business and management researchers when they solve the wrong problem precisely. This means that their problem formulation is inadequate which may lead to disastrous consequences for the well-being of the stakeholders. To avoid substantive failures in problem solving business and management scholars should reconsider the basic assumptions of the system under their study and include as many stakeholders' views as possible. Appropriate problem solutions should address all the important dimensions of the problem in question (the scientific-technical, the interpersonal-social, the systemic-ecological, and the existential-spiritual), and create some optimal balance among them. The job of responsible business and management research is identifying the right problems and producing solutions for them that are substantively adequate and ethically acceptable in broad socio-economic context.

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\* The paper is based on and expands further the author's paper on "Responsible Social Science in the Age of Economic Crisis" (*Human Systems Management* 2014 Vol. 33, No. 1-2, pp. 1-5., DOI: 10.3233/HSM-140805) Permission for using the paper is granted by the Publisher. The present version of the paper has largely benefited from constructive comments by *Anne Tsui*, Founder of RRBM.

## **1 Introduction**

The world is undergoing unprecedented changes and transformations in economics, business, management, technology, and politics. The responsibility of business and management research is pinpointed and elevated by the current crisis with no end in sight. The RRBM (2019) movement is a worldwide effort to make this correction.

Incorrect diagnosis of the crisis and insufficient proposals for “solving” the basic problems address the responsibility of business and management researchers who create theories and models that underline and legitimize the current flawed economic and business functioning.

Business and management scholarship has value-laden implications.

Anne Tsui argues that

Historically, management research owes its existence to the rise in large business organizations and the issues this transformation raised for managers, employees, and society at large. But arguably, over time, many researchers have sought to emulate their colleagues in the traditional disciplines by advocating dispassionate value neutrality toward their work. Disabusing us of the notion of a value-free scientifically neutral ivory tower, (...) there is a tension between the value-free ideal and the social responsibility of universities. The distance between solving real-world problems and providing esoteric contributions to a very narrow audience of scholars leads to irresponsible outcomes. The result is a waste of resources that distances scholars from facing scientific failure. (Honig et al. 2018: 415)

Highly influential but erroneous intellectual weapons of business and management scholarship include agency theory, corporate governance models, monetary incentive schemes for top management, and the shareholder value maximization model.

In ethics the most advanced concept of responsibility was developed by German-American philosopher Hans Jonas (1984, 1996). He defines responsibility as a duty in caring for the beings

affected by one's actions and policies. The beings to be considered may include human persons, social communities, non-human creatures, ecosystems, and future generations. (Zsolnai 2006)

Jonas underlines that moral responsibility concerns the fate of other beings. "I feel responsible, not in the first place for my conduct and its consequences but for the *matter* that has a claim on my acting." For example "the well-being, the interest, the fate of others has, by circumstance or by agreement, come to my care, which means that my control *over* it involves at the same time my obligation *for* it." (Jonas 1984)

Business and management researchers cannot ignore the direct effects and longer term consequences of their problem-analysis and problem-solutions on human communities, the natural environment, and future generations.

## **2 Problem Formulation**

A problem is a gap between an "ought" and an "is," the difference between an ideal—something which is desired—and the actual situation as it is perceived. Important problems typically appear as "messes," which present themselves with no clear indication on how to solve them. It is neither easy to know what the ideal is, nor easy to state what the actual situation is. (Ims and Zsolnai 2009)

Mitroff and Silvers (2009) refer to John Tukey, the famous statistician, who once said: "I suspect that most failures occur because we attempt to solve the wrong problems in the first place, and not because we fail to get the right solutions to the right problems." Substantive failures occur if researchers develop the solution to the wrong problem and then fools themselves into believing that they have solved the right problem to begin with.

Harvard decision theorist Howard Raiffa labeled the error of solving the wrong problem precisely as the "Error of the Third Kind". He called the error of solving the wrong problem precisely the Error of the Third Kind because the Error of the First Kind and the Error of the Second Kind were already well-known in mathematical statistics. (Keeney and Raiffa 1976)

Mitroff and Silvers (2009) notice that while the Error of the First Kind and the Error of the Second Kind are taught in every course in statistics, the Error of the Third Kind is almost never discussed. At the basic level Error of the First Kind and the Error of the Second Kind involve technical knowledge. In contrast, the Error of the Third Kind demands wisdom, the ability to exercise critical thinking (to be aware of and to challenge one's basic assumptions). Ironically, assessing the consequences of the Error of the First Kind and the Error of the Second Kind involves non-technical thinking; i.e., values and wisdom. (Douglas 2003)

A revealing example of wrong problem formulation is when business and management scholars frame the main problem of managing a company as the *agency problem*. It suggests that there is an unavoidable conflict between the owners and the managers of the company. Managers tend to use the resources of the company for their own material interest, which results in loss of efficiency and profit. (Jensen and Meckling 1976)

Wharton School business ethicist Thomas Donaldson (2012) demonstrates that this problem formulation is essentially wrong. He developed an impossibility theorem for corporate governance that clarifies how agency theory neglects normative concepts that compromises its application. For example,

agency theory neglects to consider what general obligations, moral or otherwise, principals might have either to their agents or to other groups inside or outside the firm. (...) One may ask whether a manager is obliged to lie to employees (thus violating the implicit obligation to tell the truth) in order to effect a marginal benefit for shareholders, whether a manager is obliged to violate an employee's right to privacy to marginally enhance the property rights maximizing impact for shareowners, or whether a manager is obliged to engage in environmental abuse when operating in countries with insufficient environmental protections. (Donaldson 2012)

For avoiding substantive errors in problem formulation different advices have been developed in research methodology. Russell Ackoff (2004) suggested reconsidering the basic assumptions of the system under question. Ian Mitroff (1998) urges to include as many stakeholders' views as possible in the process of problem formulation.

Business and management scholars need to employ *holistic thinking* to define the right problem in their study. Assumptions about the stakeholders and their broader social context should be scrutinized. Business and management research should define the right stakeholders, and this generally means expanding the set of conventionally accepted stakeholders. To define the right problem precisely is indispensable for avoiding the Error of the Third Kind.

The systems methodology developed by Russell Ackoff (2004) at the Wharton School states that a system performance is determined by the adequateness of the basic assumptions on which it functions and on the way the system is capable of pursuing its objectives. Problems indicate that the basic assumptions are inadequate and/or the system is incapable of performing adequately.

Corporate governance models typically favor institutional arrangements in which executives are accountable to the Board of Directors and not directly to the shareholders or other representatives of society. This kind of arrangement makes it easy for corporate executives to avoid full responsibility for their decisions and policies affecting the future of the company and the well-being of diverse stakeholders including the company's stockholders. In this way corporate executives are discouraged to serve as guardians of society's vital interest. The result is corporate "short-termism" and malfunctions even from a narrow economic point of view. For decades management and business scholars have missed the opportunity to shape the thinking of executives and their decision process. Blind following of a theory with flawed assumptions has reduced most of academic research to offering irrelevant knowledge at best or solutions harmful to society at worst.

Cornell University legal scholar, the late Lynn Stout (2012) forcefully criticized the so-called "shareholder myth". She shows that putting shareholders first harms investors, corporations, and the public. The assumption that corporations should maximize shareholder value fails to capture the real structure of public companies with directors, executives, shareholders, debtholders, and other stakeholders. The first fundamental error of the shareholder paradigm is the belief that shareholders own the corporation. However, the corporations are independent legal entities that own themselves. Shareholders own shares of stock, not the corporation itself. The second erroneous belief is that shareholders are the residual claimants in the corporation. In reality the corporation is its own residual claimant, and the board of directors decides what to do with the

corporation's residual. The third mistaken belief is that shareholders are principals who hire directors and executives as their agents. But corporate law renders that the corporation is controlled by the board of directors, not by shareholders. Shareholders have certain rights – the right to vote, the right to sue, and the right to sell their shares – that can be used to influence the board but these rights have little practical value in seeking to make directors serve the interest of the shareholders.

Widespread empirical evidence shows that using the shareholder value maximization model hurts not only stakeholders and society at large but also shareholders themselves, both individually and immediately, as well as collectively and over time. (Stout 2012)

More recently, Harvard Business School professors Joseph L. Bower and Lynn S. Paine (2017) made similar points. They argue that shareholders' wealth is not the same as the health of the company, and the latter should be the primary concern of those who manage corporations. This change from shareholder centered to company centered view could make companies less vulnerable to damaging forms of activist investing and make it easier for managers to focus on the long term.

### **3 Developing Substantively Adequate and Ethically Acceptable Solutions**

Solutions developed for business and management problems are never ethically neutral. They confirm or violate ethical claims of the stakeholders and generate different payoffs for them. The use of multidimensional systems thinking may help researchers (and also practitioners) to generate solutions for business and management problems which are substantively adequate and ethically acceptable in broad socio-economic context.

The standard solution to the agency problem is to provide managers of the company with high monetary incentives including excessive pay and bonuses. This solution may become counterproductive as it usually generates adverse effects on managerial performance and creates negative effects for the employees and the society at large.

High monetary incentives may have an adverse effect on managerial performance in a broad sense. Ims, Pedersen, and Zsolnai (2014) argue that one-dimensional economic incentives may crowd out existential, social, and ecological values that influence the manager's commitment to

ensure responsible business conduct, and have negative spillover effects that reduce the manager's performance. (Bouckaert 2006, Frey 1997, Ims and Zsolnai 2009, Mitroff 1998)

Psychologists including Deci and Ryan (2000) have illuminated the relationship between intrinsic and extrinsic motivation, that is motivation inherent in the task itself and motivation that relies on external rewards or sanctions. In economics literature, the crowding-out effect, that is instances where external rewards in fact reduce the motivation of the actor, have been explored both conceptually and through a number of experimental studies. (Frey 1997)

Ims, Pedersen, and Zsolnai (2014) show how high-level compensation crowd-out not only intrinsic motivation of managers, but also existential, social, and ecological value considerations that influence the managers' commitment to responsible business conduct. Excessive compensation schemes may be detrimental to the inclinations of managers and their organizations to act responsibly. The crowding-out effect is often referred to as "the hidden cost of reward". (Deci 1976) It can be called the hidden existential, social, and ecological costs of one-dimensionality of business and management conduct. This is an instructive example of a highly complex problem with a single-dimension solution. It shows that wrong problem framework may lead to solutions that are not only wrong, but may be harmful.

Mitroff (1998) suggests that there are four basic, irreducible dimensions of any important problem: the scientific-technical, the interpersonal-social, the systemic-ecological, and the existential-spiritual. Researchers and practitioners should use all these dimensions as an integrated framework for problem identification to avoid solving the wrong problem.

The *technical-scientific* dimension is the dominant perspective in today's business and management thinking and favors technical solutions to the problems, even when other solutions are more appropriate. This techno-centric bias is partly explained by the status and prestige that engineers and economists enjoy in our culture. This dimension also dominates today's business and management research by focusing on the scientific rigor without correspondence attention to the relevance of the topic for use in the real world.

The *interpersonal-social* dimension concerns the way the problem is perceived from a social, a group, and a family point of view. Social relationship and social issues get a lot less attention

than production efficiency and performance outcomes in mainstream research agenda (Walsh et al., 2003).

The *systemic-ecological* dimension takes into consideration the long-term consequences of how the problem is solved. It assumes that all things are interconnected. This dimension involves the perspective of future generations and nature and goes beyond geographic borders and narrow time limits. The finance and business management literature almost completely lacks the discussion of the vital connections between economic functioning and the Earth systems processes and hence disregards most of the negative effects of business and management practices on nature and future generations. (Shrivastava et al 2019)

The *existential-spiritual* dimension emphasizes the lives and fates of individual human beings and the impacts on their life-worlds. Feelings and meaning are important aspects in this dimension. The important existential questions are as follows: Who am I? Who do I want to be? How do my actions influence my life project? Which give meaning and purpose to my life? Ultimately, all important decisions and acts influence the self of the decision makers and decision receivers. It is important to emphasize the existential/spiritual dimension because it is usually ignored or even denied in mainstream social science literature. (Zsolnai and Flanagan 2019) It is almost non existing in business and management research too. Yet we cannot ignore that organizations are social systems with people who have deeply held feelings and spirits. (Ims and Zsolnai 2009)

Finding appropriate solutions for business and management problems require addressing all dimensions of the problem (the scientific-technical, the interpersonal-social, the systemic-ecological, and the existential-spiritual) and integrating them into solutions that create a new balance among them. Ethics is implicated by any problem solution, so it is worthy to evaluate more explicitly the generated problem solutions in the lens of ethics.

Ethics offers two main paradigms that are the most relevant for assessing the ethical validity of solutions developed for business and management problems. One such paradigm is called “consequentialism” while the other is called “deontology.” Consequentialism bases the evaluation of a problem solution solely on its real world consequences. In this paradigm the ethical value depends



on the goodness of consequences for the stakeholders. Contrary to this, deontology favors the evaluation of a problem solution on the basis of its correspondence to the relevant ethical norms. In this paradigm the ethical value depends on ethical rightness, that correspondence to the norms. Deontology disregards the actual consequences of a problem solution.

Verschuren and Zsolnai (1998) argue that one has to use *both* the consequentialist and the deontologist paradigms in assessing the ethical value of solutions developed for business and management problems. Multidimensional systems thinking also applies here. Solving the right problem should consider both ethical principles. A holistic approach would be explicit about these two considerations, and avoid compromising one principle with the exclusive focus on the other principle.

The external value of a problem solution is largely determined by its service to the stakeholders. A solution can be considered good if it meets the needs and wants of the stakeholders. The limitations of this approach can be surpassed if one introduces deontological considerations into the evaluation. Certainly, a solution should satisfy the basic ethical norms that are commonly accepted by the community of stakeholders and the general public. How well a solution comes up to the relevant ethical norms constitutes the intrinsic value of the solution.

Excessive pay for business executives has been criticized by many stakeholder groups as well as the general public. Many people including politicians and employees believe that the extremely high salaries and bonuses of business executives violate the principles of fairness and social justice. (Frey and Osterloh 2005) Also, monetary incentives induce corporate behavior that results in detrimental effects which may lead to further destruction of the company and its business ecosystem. (Ims, Pedersen, and Zsolnai 2014)

#### **4 Conclusion**

A distinctive characteristic of responsible business and management research is that it aims solving the right problems in substantively adequate and ethically acceptable ways in broad socio-economic context. This involves defining the problems in the right form and developing solutions that meet the relevant ethical norms of the stakeholders and generate true benefits for them.

To avoid substantive failures in problem formulation business and management scholars should reconsider the basic underlying assumptions of the system they study and should investigate the chosen problem from a wide range of perspectives taking the views of different stakeholders into consideration.

In avoiding failures in developing solutions, business and management scholars may use multidimensional systems methodologies. Appropriate solutions address all the important dimensions of the problems in question (the scientific-technical, the interpersonal-social, the systemic-ecological, and the existential-spiritual), and create some optimal balance among them. Business and management researchers are advised to evaluate their solutions from a deontological point of view (Which ethical norms are violated or satisfied by them?) and also from a consequentialist point of view (What are the payoffs for different stakeholders?).

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