„Krytyka Prawa", tom 12, nr 2/2020, s. 9–19, ISSN 2080-1084, e-ISSN 2450-7938, © 2020 Author.

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Where Disciplines Meet

Submitted: 14.02.2020. Accepted: 17.04.2020

Abstract

As we are nearing the end of the first 25 years of the 21st century. What is increasingly noticeable is the growing dysfunction and pathology of big systems and of their elements, including – given the omnipresent interrelations and interdependencies – entire masses of smaller entities, together with micro- and family businesses. The author asks a question of whether it could be reasonable to consider returning to some of the assumptions, instruments, and methods adopted within the framework of the systems approach from the 1950s, 1960s, and 1970s, which was originally conceived and created to treat big systems. Do the achievements made in the field of research in recent decades make it possible to bridge the cognitive gaps that determined the failure of the systems approach in the past century? These gaps are mainly the social mechanisms of functioning of organised systems. There is absolutely no doubt that we have seen huge progress in this domain, mostly thanks to interdisciplinary research and research conducted in recently-emergent "hybrid" disciplines like economic or organisational sociology and psychology, sociology and psychology of management, behavioural economics, behavioural finance, contemporary political economics, but also hybrid legal sciences such as: economics, sociology, and politics of law, political sciences and strategic analyses. The author argues that we need an attempt of a certain reactivation of the systems approach in the context of diagnostics and treatment, meaning a redesign of entire organisational systems – or dynamic connections in a networked structure, actually. It is necessary to modify the classical procedure of systems analysis and adapt it to the specific nature of the changeable networked structures of the 21st century.

Keywords: systems approach, systems analysis, interdisciplinarity, diagnostic approach, systems theory, "hybrid" disciplines

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 DOI: 10.7206/kp.2080-1084.377

„Krytyka Prawa", tom 12, nr 2/2020, s. 9–19, ISSN 2080-1084, e-ISSN 2450-7938, © 2020 Author.

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Na pograniczu dyscyplin

Złożony do redakcji: 14.02.2020. Zaakceptowany do druku: 17.04.2020

Streszczenie

Pod koniec pierwszego ćwierćwiecza XXI w. rzucają się w oczy narastające dysfunkcje i patologie wielkich systemów oraz ich elementów, a zarazem, za pośrednictwem wszechobecnych związków i zależności wzajemnych, całych mgławic mniejszych podmiotów łącznie z rodzinami i mini firmami. Autor stawia pytanie, czy nie należałoby powrócić do niektórych założeń, instrumentów i metod podejścia systemowego z lat 50., 60. i 70. XX w., które według zamierzeń jego twórców miało umożliwiać uzdrawianie wielkich systemów. Czy osiągnięcia badawcze ostatnich dziesięcioleci pozwalają wypełnić te luki poznawcze, które zdecydowały o niepowodzeniach podejścia systemowego w ubiegłym wieku? Owe luki to przede wszystkim społeczne mechanizmy funkcjonowania zorganizowanych systemów. Nie ma najmniejszych wątpliwości, że dokonał się w tym obszarze ogromny postęp głównie dzięki badaniom interdyscyplinarnym i prowadzonym w ramach wyłonionych w ostatnich latach dyscyplin „hybrydowych", takich jak socjologia i psychologia ekonomiczna, organizacji i zarządzania czy ekonomia behawioralna lub finanse behawioralne, nowoczesna ekonomia polityczna, ale także hybrydowe nauki prawne, takie jak ekonomia, socjologia i polityka prawa, nauki polityczne i analizy strategiczne. Zdaniem Autora potrzebna jest próba swoistej reaktywacji podejścia systemowego w zastosowaniu do diagnostyki i uzdrawiania, czyli przeprojektowywania systemów organizacyjnych, a właściwie dynamicznych powiązań w sieci. Konieczna jest modyfikacja klasycznej procedury analizy systemowej i dostosowanie jej do specyfiki zmiennych układów powiązań sieciowych w XXI wieku.

Słowa kluczowe: podejście systemowe, analiza systemowa, interdyscyplinarność, podejście diagnostyczne, teoria systemów, dyscypliny „hybrydowe"

Organisations and large systems alike fall ill, weaken, and perish. Companies like Motorola, Nokia, or Kodak, once great and admired, sink into oblivion, or become swallowed up and survive only as legendary commercial brands such as: Citroën, Maybach, or Alfa Romeo. The fundamental reason for such a state of affairs is the inability to recognise and make use of one's own potential. It was in Kodak's laboratories where the first digital camera was created in 1975. Kodak, however, went out of business 40 years later because it was unable to keep up with digital technology. In 1970, Xerox' engineers built the first personal computer with a graphical user interface, a mouse, and a set of icons. The invention was ignored and put aside, with Xerox sticking to manufacturing copiers to this day...[2] Such an analytical inefficiency is something that bothers not only and mostly businesses but also organisations of all sorts. We often hear that the health care sector, or even an entire state, unable to provide the right security to its highest authorities[3] and to serve the many other purposes it is expected to serve, is "sick". Sometimes this sickness leads to the demise of even gargantuan organisations such as Lehman Brothers Holdings Inc., whose collapse triggered the 2008 global financial crisis, or even of state organisations such as pre-partition Poland, the so-called I Rzeczpospolita (Polish-Lithuanian Commonwealth), divided between its partitioners at the end of the 18th century, or the "failed states" of today, such as Somalia or Libya. Most often, however, a chronic disease often means long-lasting – or even permanent when it comes to the public sector – drainage and waste of the resources of an organisation and of its environment, which can be considered a kind of parasitism.[4] Here, parasites are businesses, administration units, and public utility institutions alike, as well as entire indebted states 'parasitising' the wealth and prosperity of future generations.

While the symptoms of a disease in commercial organisations (operating in competitive markets and profit-oriented) are visible and felt (bad financial situation, dissatisfaction both inside and outside of the organisation, losing clients and business partners etc.), it is much more difficult to diagnose their "health" in general

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2 T. Harford, *Why Big Companies Squander Good Ideas*, „Financial Times" 2018, September 6.

3 P. Stankiewicz, *21 polskich grzechów głównych*, Warszawa 2018.

4 M.W. Meyer, L.G. Zucker, *Permanently Failing Organizations*, Sage 1989; A.K. Kozminski, J.L. Tropea, *Negotiation and command. Managing in the public domain*, „Human Systems Management" 1982, 3, pp. 21–31.

 DOI: 10.7206/kp.2080-1084.377

and identify the right indicators thereof. There are two ways to deal with the said disease symptoms: either to eliminate the disease symptoms, believing that this will automatically heal the organisation, or to devise various models of "ideal" organisations.[5] The first approach is simpler and more practical. It is a solution applied by consultants hired to heal organisations, and most often to eliminate any inefficiencies they may suffer from. The other approach gains in significance when the designed therapy is long-term and fundamental: when it addresses the principles of governance of the organisation, its mission, and the interest of its major stakeholders. It is a certain "borderland" where economics, management, political sciences, and law meet. If representatives of various disciplines of social sciences do not get together and explore it, it will be impossible to understand the nature of contemporary crises and to design the right measures to prevent them. Each of these sciences alone is powerless in the face of pathologies, crises, and catastrophes of big and complex systems.

Likewise, the contemporary consulting practice is dominated by high-flown ad-hoc, fragmentary solutions, aimed at achieving short-term effects as soon as possible. Here are just a few examples of English-language buzz words[6] which have become symbols of coming and going management fads offered by many consultants as well as consulting and training companies:

- Scenario planning,
- Benchmarking,
- Rightsizing,
- Continuous improvement,
- Process re-engineering,
- Balanced scorecard,
- Blue Ocean Strategy,
- Value Chain Analysis,
- Customer relationship management.

These are products that have gained a considerable interest and popularity in the growing global market of consulting and executive education. According to Consultancy UK, only the global market of consulting services was valued at USD 250 billion/year in 2018. There is a lot at stake then.

Such temporary and fragmentary solutions are fully justified by the increasing pressure of competition in modern-day business, demanding quickness and flexibility in reaction and the type of leadership that is about anticipating and initiating

5 R.L. Ackoff, J. Magidson, H.J. Addison, *Projektowanie ideału*, Warszawa 2007.

6 M.C. Jackson, *Systems Thinking. Creative Holism for Managers*, John Wiley & Sons 2003, p. XIV.

changes.[7] They are not suitable for diagnosing and treating large-scale systems embedded deeply in social-political, and even geopolitical environments, but mainly in distinct legal systems. This is exemplified by the problems experienced in 2018 by the global giant Facebook in connection with personal data protection. The company had to comply with many different legal systems at the same time.

Moreover, an analysis of the economy of today implies that private business will not play an absolutely dominant part therein. If we look at the entire public sector encompassing e.g.: healthcare, education, administration, a vast part of infrastructure, defence, security, science, a big part of culture, and realise the importance of the regulatory role of the state and the legal regimen it has imposed, it will appear that organisations from the public sector play a huge part in the functioning of our society.[8] The essence of such a system was expressed in the following words by the former Premier of the State Council of the People's Republic of China in a 2008 interview: "The complete formulation of our economic policy is to give full play to the basic role of market forces in allocating resources under the macroeconomic guidance and regulation of the government. We have one important piece of experience of the past 30 years, that is to ensure that both the visible hand and invisible hand are given full play in regulating market forces."[9] The public sector appears to be increasingly setting the framework within which private business operates, not only in authoritarian China but also in Europe and the US alike. This is proven by the fact of "trade wars" being fought again by various states and by the increasingly occurring de-globalisation policies or the increasingly stricter international regulations concerning e.g. protection of the natural environment, personal data, or employment rights – with such regulations imposed against the logic of the said policies.

This is far from saying that the significance of certain hybrids of private business and public sector – in the form of enterprises owned fully or in majority by the state – is becoming smaller.[10] Such hybrids are highly specific in terms of their institutional and legal features. They are a huge and unabating force in the global economy as well as in the economies of particular countries. Here are just a few examples:

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7 B. Joiner, B. Josephs, *Leadership Agility*, John Wiley & Sons 2007; J. Menkes, *Better under Pressure*, Boston Mass. 2011.

8 M. Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, London 2013; eadem, *The Value of Everything. Making and Taking in the Global Economy*, London 2018.

9 J. Bremmer, *The End of the Free Market. Who wins the war Between States and Corporations Portfolio*, New York 2010, p. 129.

10 J. Bremmer, op. cit.; A.K. Koźmiński, *Przedsiębiorcze państwo*, „Ekonomista" 2014, 2, pp. 321–333.

 DOI: 10.7206/kp.2080-1084.377

- National producers of fossil fuels, such as: the Saudi ARAMCO, the Brazilian PETROBRAS, or the Russian GAZPROM have dominated this market sector globally;
- State banks funding development projects. Three of the four largest banks in the world in terms of banking assets are Chinese;
- Sovereign wealth funds accumulating state reserves in resource-rich countries such as: Saudi Arabia, Norway, the United Arab Emirates, but also e.g. in Singapore. Their holdings amount in total to USD several trillion;
- State-owned companies or companies which are partially privately-owned but fully dependent on the state because of the system of public procurement adopted in sectors considered "strategic", e.g. the armaments industry, the power industry, or the transportation industry;
- Various state-funded development agencies, e.g. the Tennessee Valley Authority from the US or Poland's Agency for Restructuring and Modernisation of Agriculture.

Organisations operating in the public sector or associated therewith fall ill as well, and the condition of illness is often more severe and lasts longer than in the case of private entities. Analytical inefficiency is accompanied by political inefficiency, and they enhance each other as a result. This is because such organisations are put on "drips" filled with public money (so they are not threatened with extinction due to mistakes) and their authorities are evaluated more in terms of their political inclinations than their managerial or financial performance. And these political and social considerations make privatisation an impossible scenario in the case of such organisations. At the same time, short-term, fragmentary treatment, successful to a smaller or greater extent in private business, is unable to cure them. First, due to the complicated bundles of goals pursued by such organisations as e.g. healthcare facilities, higher education institutions, courts, power supply or defence systems. Second, due to the extended time horizon for the achievement of such goals. Third, due to the large number of stakeholders involved and the disparity of aims of each of them. All sorts of political games are especially fierce inside public sector organisations. This certainly does not benefit any therapy. As a result, the efficiency – or rather the progressing inefficiency – of the public sector grows into one of the main factors determining (curbing) social and economic development. Mariana Mazzucato[11] quotes the example of Scotland, where the adoption of the private finance initiative mechanism (establishment of public-private partner-

[11] M. Mazzucato, *The Value of Everything...*, p. 256.

ships) led to 80 projects aimed to benefit the public sector (e.g. education, healthcare) costing the state budget GBP 26 billion more than they should have!!! This level of waste and ineffectiveness is nothing unusual. In fact, this is incomparably higher in countries which are organised and managed worse than the United Kingdom. There is a need for a new approach to healing organisations. One that would consider the specific needs of organisations, undertakings, and projects operated in the public sector and of the business related thereto. It is reasonable to search for inspiration in the past. Many useful examples of huge amounts (literally!!!) being "eaten up" can be found especially in the sector of defence and the related industry.

A good example of a "wasted opportunity" in this area is the story of British armoured forces in the period of World War I. In 1912, an Australian engineer named E.L. de Mole addressed the British War Office to offer them a tank as a new type of armoured fighting vehicle, the design of which was strangely similar to the version put to service in 1917 (at least 3 years too late!). The first 400 tanks were rolled out onto the battlefield by J.F.C. Fuller, a senior British Army officer, who became the greatest authority and visionary in the area of modern armoured warfare. Although the tanks managed to break through the German defence line at Cambrai, their effectiveness was limited due to the low speed and poor combat equipment. The next model, Medium D, was able to travel at 20 miles per hour, with a range of 200 miles. Based on those parameters, Fuller came up with "Plan 1919" – a "blitzkrieg" strategy: to win the war by means of a single tank raid targeted at the very centre of the German command. Historians have dubbed this plan "the most famous unused plan in military history". It was too late to put it into action because the war ended in November 1918. Still, in 1918, Great Britain had the best armoured divisions in the world and a clear idea of how to make use of them in blitzkrieg. Germans were far behind in this aspect. The legendary future commander of German armoured corps, General Heinz Guderian, first set foot in a tank during the Swedish army's manoeuvres in 1929. After the war, the British War Office and the General Staff spared no effort to make Fuller's idea disappear from collective memory and be buried forever in the archives. In the 1930s, in response to a threat from Germany, Field Marshal Sir Archibald Montgomery-Massingberd, had the expenses on hay for war horses increased 10 times. In 1932, the British Army decided to opt for an "experimental" solution and ordered 9 light four-tonne tanks, whose weight combined was lower than that of one modern German "Tiger". It was Germans who made use of and developed Fuller's idea, the effects of which materialised in 1939 and 1940. The British failed to arrange for an in-depth analysis of their entire military system, which would let them determine the roles of various types of armed forces in modern warfare. This

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failure cost them the status of an empire and of the prominent civilisation of the West![12] Many armies of today across the world face similar challenges due to the emergence of cybernetic forces.

An example from the US appears to be more optimism-inducing. Right after being elected President of the United of States of America in 1960, John F. Kennedy made a surprising regarding the nomination for the post of the Secretary of Defense. It was offered to Robert McNamara, then 45, a non-party technocrat, who at the time was the President of the Ford Motor Company (as the first person from outside the Ford family). He served as Secretary of Defense for 8 years, which is the longest term of office at this post ever. His main job was to organise America's huge sector of defence at the peak of the Cold War, the symbol of which was the major delays in the production of Polaris missiles and going well over the project budget. In response to the found challenge, McNamara designed and tested three analytical instruments which are still applied to this day and which appeared to be fully translatable into practical measures.[13] These are:

- Systems analysis, which is a multi-stage iterative process of solving complex quantitative-qualitative (poorly structured) problems. The solution is a feasible "path" of transition from an undesirable initial state to a state the actor considers desired, meaning at least satisfactory;[14]
- Planning, Programming, Budgeting System based on budgeting specific programmes (e.g. acquisition of weapons with certain specific features and parameters). It makes it possible to allocate a limited amount of resources in a way that enables the achievement of the intended goals through a continued process of cost estimation and expenditure control;
- Policy Analysis, enabling public actors (often with opposite interests) to evaluate different variants of long-term activity undertaken to the benefit of commonly accepted goals. The instrument was applied especially often to the US defence policy.

McNamara's concepts were grounded in the then-common (1950s) practice of management at large American industrial corporations as well as in the then-dominant general management theory and – in broader terms – in a philosophy referred

12 T. Harford, op. cit.

13 Ph. Rosenzweig, *Robert S. McNamara and the evolution of modern management*, „Harvard Business Review" 2010, 12, pp. 132–148.

14 S. Rosen, *Systems analysis and the quest for national defense*, „Public Interest" 1984, 3, pp. 3–17.

to as systems philosophy. The proposals of the systems approach can be summarised in the form of four essential postulates:[15]

1. Aspiring to integrate science and overcoming interdisciplinary barriers;
2. Considering the analysed objects holistically, as open systems "immersed" in their environment and engaged in an exchange of information, resources, and all sorts of supplies therewith;
3. Searching for a formalised language to describe the analysed systems and the broadest possible application of computing technique and simulation models;
4. Treating the general systems theory[16] as theoretical grounds of solving practical problems concerning constructing and managing technical, economic, and social systems.

The 1980s and 1990s are the times of twilight of the systems approach, which gradually became replaced by the situational approach adopted by consultants and supplanted in the theoretical layer by concepts grounded in social sciences, such as organisational game models, organisational balance models, or organisational network models.[17] The popularity of the systems approach declined, in general, in science and in particular in management theory and practice for several reasons, including:

- Firstly, ignoring the psycho-social and political aspects of the functioning of systems – or at least not taking these aspects into sufficient account, which meant a certain utopian technocratism, which was highlighted as early as at the initial stages of the development of the systems approach;[18]
- Secondly, the hasty application of the systems approach by big state bureaucracies,[19] and even totalitarian regimes.[20] As a result, the neoconservative revolution of the 1980s, embodied by figures like Ronald Reagan or Margaret Thatcher, aimed its blade also at statist systems utopias.

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15 A.K. Koźmiński, *Ujęcie systemowe*, [in:] idem (ed.), *Współczesne teorie organizacji*, Warszawa 1983, p. 70; A.K. Koźmiński, D. Latusek-Jurczak, *Rozwój teorii organizacji: od systemu do sieci*, Warszawa 2011, p. 39.

16 L. Von Bertalanffy, *Ogólna teoria systemów. Podstawy, rozwój, zastosowania*, Warszawa 1984.

17 A.K. Koźmiński, A.M. Zawiślak, *Pewność i gra*, Warszawa 1982; A.K. Koźmiński, D. Latusek-Jurczak, op. cit.

18 R. Boguslaw, *The New Utopians*, Englewood Cliffs 1965.

19 R. Lilienfeld, *The Rise of Systems Theory. An Ideological Analysis*, New York 1978.

20 N.E. Kobrinski, *Podstawy sterowania w systemach ekonomicznych*, Warszawa 1972.

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While the application of the systems approach has been successful in the designs of largely technical systems (e.g. military, IT, logistic, or manufacturing system), the most spectacular failures resulting therefrom have occurred in areas dominated by human, cultural, or political factors. These failures include expert-designed systems plans of healthcare or education reforms, expert-designed systems programmes of economic development devised for countries like Mexico or some petroleum-rich Arab countries later on, or systems plans of redevelopment of cities according to purely technocratic rules, like the infamous Project Paris entrusted in the 1970s by Georges Pompidou, France's President, to the systems guru – Russell Ackoff; fortunately for this wonderful city, Pompidou's successors abandoned the project.

Today, as we are nearing the end of the first 25 years of the 21st century. What is increasingly noticeable is the growing dysfunction and pathology of big systems and of their elements, including – given the omnipresent interrelations and interdependencies – entire masses of smaller entities, together with micro- and family businesses. The existing national and global financial, energy, transportation, demographic, education, healthcare, law enforcement, security, and a range of other systems prove to be obviously inefficient. The growing range and rate of complexity of these systems make them increasingly harder to control not only by politicians but also by managers, becoming more and more autonomous. The methods aimed to heal organisations, designed and successfully applied in business by consultants, appear to be of no use against the said serious condition. Maybe it is now reasonable to consider returning to some of the assumptions, instruments, and methods adopted within the framework of the systems approach, which was originally conceived and created to treat big systems?

To give a positive answer to the above question, it is necessary to survey the achievements in the field of social sciences in recent decades and see if they make it possible to bridge the cognitive gaps that determined the failure of the systems approach in the 1950s, 1960s, and 1970s. These gaps are mainly the social mechanisms of functioning of organised systems. There is absolutely no doubt that we have seen huge progress in this domain, mostly thanks to interdisciplinary research and research conducted in recently-emergent "hybrid" disciplines like economic or organisational sociology and psychology, sociology and psychology of management, behavioural economics, behavioural finance, contemporary political economics, but also hybrid legal sciences such as: economics, sociology, and politics of law, political sciences and strategic analyses. Despite the institutional obstacles and the artificially erected bureaucratic walls between narrow fields of knowledge, it is more and more common to see social sciences overlap and merge, accompanied by the interpenetration of social sciences and exact or biological sciences (e.g. sociobiology or mathematical game theories), as once called for by the originators of

the systems approach.[21] Likewise, our body of literature on management appears to feature more and more publications proving the increasingly holistic and interdisciplinary approach to human behaviour in organisations.[22]

The greatest achievement of contemporary social sciences in the field of organisation and management has been to discover their network-like nature. The most complex systems are composed of changing, "pulsating" networks of connections based on relationships involving collaboration, antagonisms, competition, playing various sorts of games with each other.[23] Such is the present stage of the anthropological evolution of humankind.[24] This calls for revising the principles and procedures of systems diagnostics and organisational therapy and abandoning the vision of a centrally-controlled homogeneous whole, which does not necessarily mean it is completely useless, I would say. On the contrary. It seems to offer the only real chance to understand the contemporary world of organisations and the diseases that plague it.

What we need is an attempt of a certain reactivation of the systems approach in the context of diagnostics and treatment, meaning a redesign of entire organisational systems – or networks of connections, in fact. The starting point should be a relatively complete typology and a preliminary analysis of the types of diseases and pathologies that currently trouble organisational systems considered as networks. At their foot we will find individual and collective human behaviour, but also institutional and legal forms. In order for the diagnosis to be correct, it is necessary to discover the regularities governing them in a dynamic network environment. This must be the basis for the modification of the classical framework of systems analysis and for adapting it to the specificity of the changing landscape of network connections. The analysis shall conclude with recommendations, which become the starting point of therapy. In the highly changeable and hardly predictable network environment, this means starting a certain game, which should aim at achieving the desired effects. The game design must be, however, modified depending on the achieved outcomes. Therapy is therefore always dynamic. It cannot be decreed. This is proven by the examples of application of systems analysis at global, regional, national, business, and micro-business levels. These examples prove that the systems approach can be applied to diagnose and treat organisations – or actually networks with variable architectures and formal-legal parameters.

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21 L. Von Bertalanffy, op. cit.

22 E.g.: L. Czarnecki, *Model DNA firmy*, Wrocław 2015; M. Golonka, *Zarządzanie z przewagą sztuki*, Warszawa 2014; D. Jemielniak, *Życie wirtualnych dzikich. Monografia Wikipedii*, Warszawa 2013.

23 E. Ostrom, *Understanding Institutional Diversity*, Princeton–Oxford 2005; A.M. Slaughter, *The Chessboard and the Web. Strategies of Connection in a Networked World*, Yale University Press 2017.

24 K. Fijałkowski, T. Bielicki, *Homo Sapiens przypadkiem*, Warszawa 2009.

 DOI: 10.7206/kp.2080-1084.377