ÁGNES LUBLÓY[1] AND GYULA VASTAG

Albert-László Barabási's quest for understanding influence: portrait of an introverted network(research)er

Network research in management has extended, in recent years, reaching virtually every traditional area of organisational scholarship. At macro level, network research has advanced the understanding of inter-firm relationships, strategic alliances, interlocking directorates, and network governance. At the same time, at both micro and meso levels, network research has clarified how team dynamics, knowledge transfer and exchange, social influence, and interpersonal trust shape both individual and organisational performances (Chauvet et al. 2011). Borgatti and Foster (2003) argued that the increased interest in network research is a general tendency away from an individualist, essentialist, and atomistic explanation of various research matters towards a more relational, contextual, and systemic understanding.

Chauvet et al. (2011) differentiated three distinct ways in which network concepts have entered management research. First, networks were introduced in management as a methodology (such as social network analysis, for example), serving to highlight relationships within firms, across firms, or within the organisational environment (see, for example, Kiss and Bichler 2008; Kim et al. 2011). Such research typically involved advanced quantitative methods, with a strong influence from graph theory. Second, networks were introduced in management as a theoretical concept, a new way of addressing questions, with both network ties and network structures used as explanatory concepts (see, for example, Zaheer and Soda 2009; Borgatti and Hagin 2011). Third, networks were introduced in management as a possible interpretation of organisations and as an alternative organisational logic and way of governing relationships among economic and social actors (see, for example, Lerner et al. 2011).

Its applicability in a variety of management areas is another measure of network research. Borgatti and Foster (2003) distinguished eight well-established areas in organisational network scholarship, eight major research stems: social capital, embeddedness, network organisation, board interlock, joint ventures and inter-firm alliances, knowledge management, social cognition, and group processes. Brass et al. (2004), Borgatti et al. (2009), Kilduff and Brass (2010), and Brass (2011) all reviewed organisational network research in detail.

[1] The author wishes to thank the AXA Research Fund for the post-doctoral research grant that, among many others, has also enabled this article.

In their recent article, Chauvet et al. (2011) provided evidence that network research had translated into practical implications for decision making and managerial action. The authors listed five areas where network research had introduced new angles of answering research questions and had renewed understanding of how organisations may tackle management issues: knowledge circulation and creation, governance, individual careers, entrepreneurial ventures, and team composition and management.

In addition, network analysis has also made its way into several branches of management: operations management, strategic management, marketing management, financial management, human resource management, and information technology management. In the field of operations management, for example, supply chain network analysis is a popular supply chain service offered by many consultancy firms. Among marketers, viral marketing is a popular approach—it encompasses all the techniques that build upon the social relations of customers to increase brand or product awareness by a viral diffusion process, analogous to the spread of epidemics or computer viruses (Kirby 2006). For the financial divisions of the telecommunication and banking industries, churn management is a fundamental concern for boosting profit. For human resource managers, network theory is useful in better exploiting the knowledge and capabilities distributed across the members of an organisation. Identification of influencers or key opinion leaders—a crucial approach in change management—is also gaining importance for pharmaceutical and medical companies and the social media alike.

Theoretical physicist Albert-László Barabási is central to developments in network science and the statistical physics of complex systems. The impact of his research outgrew physics and went on to influence biology, medicine, social sciences, and others, and his scale-free model developed in 1999 withstands the passage of time. The Barabási-Albert model explains the widespread emergence of scale-free networks in natural, technological, and social systems—cellular telephony, the Internet, and online communities are just a handful of examples. The Institute of Science Index (ISI) selected his 1999 'Emergence of Scaling in Random Networks' (Barabási and Albert 1999) as one of the ten most cited articles in physical sciences. In addition, Harzing's (2007) *Publish or Perish* showed almost 70 thousand citations to László's 325 articles, with a staggering h-index of 74.

László is Distinguished University Professor at Northeastern University, where he directs the Center for Complex Network Research. He holds appointments in the Departments of Physics, Computer Science, and Biology, Northeastern University, as well as in the Department of Medicine, Harvard Medical School, and at Brigham and Women Hospital. In addition, László is a member of the Center for Cancer Systems Biology at Dana Farber Cancer Institute. An ethnic Hungarian born in Transylvania, Romania, László was awarded his Masters in Theoretical Physics at Eötvös University in Budapest, Hungary, and his PhD at Boston University, three years later. After a year at the IBM T.J. Watson Research Center, he joined the University of Notre Dame as an Assistant Professor, and was promoted to the Professor and Emil T. Hofman Chair, in 2001. His latest book, *Bursts: The Hidden Pattern Behind Everything We Do* (2010), was translated in four languages, and one of his previous books, *Linked: The New Science of Networks* (2002), was translated in 11 languages. László is also co-author of *Fractal Concepts in Surface Growth* (1995) and co-editor of *The Structure and Dynamics of Networks* (2006).

His work has been widely featured in the media, including on the covers of *Nature*, *Science News*, and many other journals, and inside the covers of *American Scientist*, *Business Week*, *Die Zeit*, *Discover*, *El Pais*, *La Republica*, *Le Monde*, *London's Daily Telegraph*, *National Geographic*, *New Scientist*, *New York Times*, *Science*, *Science News*, *The Chronicle of Higher Education*, *USA Today*, and *Washington Post*, among others. He has been interviewed by ABC News, BBC Radio, CBS News, CNN, National Public Radio, NBC, and many other media outlets.

The following interview contributes to the dialogue among researchers from across the physical and social sciences who share a common interest in understanding the antecedents and consequences of network phenomena. It took place on 15 November 2012 at the Central European University.

AL&GV: From Internet and computer networks to social and biological networks, your research covers a wide spectrum. What do these systems share in common?

A-LB: *All these systems can—and should—be viewed as sets of nodes connected by links. Computers connected by physical cables or genes connected by protein–protein interactions or other metabolic reactions are all networks. Understanding their properties implies understanding their architectures—their networks—first, and is the focus of numerous research papers. The Internet and computer networks and the social and biological networks are the most prominent examples my colleagues and I have studied to date.*

AL&GV: What are your favourite networks?

A-LB: *All networks are worth studying, but a researcher's favourites are influenced by access to data, as well as by personal affinity. At the moment, my colleagues and I focus on three different classes of systems: biological networks, social networks, and online and informational networks. In biological networks, we try to understand how genes connect with one another within cells, as well as the role of this network in human diseases. In social networks, we study people talking to one another: how they talk, who talks to whom, and how you can describe these aspects formally. In many aspects, online and informational networks often overlap with the social networks. Why do we focus on these particular networks? Well, partly because the majority of my group of researchers is based in Boston, where both the Harvard Medical School (HMS) and Northeastern University are located. Our research in biological networks benefits from the expertise of our medical colleagues at HMS, while Northeastern University colleagues working with social networks contribute their expertise in the area of social and online networks.*

AL&GV: What aspect of your research has impacted the scientific community most? Does it surprise you?

A-LB: *Our article 'Emergence of Scaling in Random Networks'*[2] *has had the highest statistical impact, and it does not surprise me. It introduced the model describing scale-free networks and explained the mechanism behind it—by providing a fundamental basis, many different fields were then able to apply our findings to a wide range of networks. On a personal note, however, I am particularly excited about our work on diseases—'The Human Disease Network'*[3] *was published in 2007, in the Proceedings of the National Academy of Sciences. Despite being relatively recent, the article is very well cited—our tenth most cited article, in fact. I am a strong believer in the future of the network approach to understanding and controlling diseases.*

AL&GV: What area of network theory will most impact our everyday lives?

A-LB: *Well, it is really hard to answer this question—our interests change, our lifestyles change, and what we call 'our-everyday-lives' changes too. The best way to answer your question is by focusing on the future. What happens next? What is likely to happen in future? Facebook, Google, and other online social networks have a high impact on many people's lives—they enable us to study them. Network scientists have already contributed to online social networks—network theory tools and ideas are already incorporated into these systems, for example in Facebook algorithms. Medicine too, I expect, will experience changes in the near future, very similar to those experienced by social networks. Who knows, perhaps in as little as only ten or 20 years from now,*

2 Barabási and Albert (1999).

3 Goh et al. (2007).

research into biological networks will result in individually designed net-drugs. In my view, once they will emerge, individually designed drugs will have a huge impact on our everyday lives, and we are already moving in that direction. Further down the line, viewing the economy as a network will fundamentally change our ways of observing and predicting economic processes. However, such a fundamental change requires network data that is currently unavailable and that would require businesses to release it. Finally, the human brain is the most complex network we are aware of—that we still do not have a neuron-level map for the brain, although we know the brain is a network of neurons, is pretty puzzling. Our understanding of the function of the brain—and of consciousness—will change, as soon as we construct this map, over the next 20–30 years, I think.

AL&GV: Speaking of medicine, how close did you and your colleagues get to understanding the genetic basis of human cancer?

A-LB: *We study diseases in general—and specific conditions such as asthma, COPD*[4]*, and various heart diseases in particular—but we do not focus on cancer per se. However, a network understanding of particular diseases facilitates a network understanding of disease in general—whether cancer or asthma or any skin disease, diseases cannot be truly understood outside this perspective. The best way to cure disease is by repairing the broken component—typically a gene—which affects the entire cellular network. Treating the broken component implies treating the network as a whole. The majority of current problems in medicine are fundamentally network problems—some drugs treat the disease, but with intolerable side effects somewhere else in the body, and other drugs are still to be figured out. However, major steps have been taken in this direction, not least through recognition by the medical community that networks are essential for their research—at HMS, for example, I am involved in starting a new Network Medicine Division. This is the only way forward, in my opinion, if we wish to capitalise on the genome project. The genome project gave us the components—we now need the interactions to understand how the cell works.*

AL&GV: What area of your research has had the highest impact in business?

A-LB: *I think it is not as much my research as that of the network research community that has had a high impact in certain business areas. One such high-impact area is understanding influence: how business practices spread from certain individuals to other individuals, to sellers, marketers, and so on. The availability of very detailed purchasing and social networking data—and of related personal information—contributes enormously to understanding influence. We already see signs that understanding influence will be a transformative achievement. Another such high-impact area—in business practice, if not necessarily in business research—is diagnosing companies: mapping out their*

---

[4] Chronic obstructive pulmonary disease.

social networks, finding out their effective influences, understanding their chief executive officers' (CEOs) *decision making mechanisms, and knowing whom their CEOs should approach to take the company to the next level. Maven7, a Hungarian company, is a market leader in this area, having successfully diagnosed hundreds of national and international companies. Such dashboards of the inner workings of organisations will inevitably lead to changes in organisational cultures—including in the ways organisations are run.*

AL&GV: The churn models in the telecommunication industry are a good example for understanding influence. Also, General Motors applied network theory to problems with quality—they compared the product network as depicted in engineering change orders to the collaboration network of design engineers in various departments to determine a coordination deficit that explained about 20 per cent of the quality problems.

A-LB: *Our environments (very homogenous, usually) determine the decisions we make and the actions we take. We do not (and, possibly, we cannot) listen to everybody—we only listen to some. Thus, understanding how influence spreads within organisations is particularly important for large organisations.*

AL&GV: However, most organisations are not notorious for their openness.

A-LB: *Network science tools allow us to gauge information, where individuals are unwilling to provide it. Ideally, of course, information is collective. In reality, however, some members of any organisation will be more open than others to release information as to whom they talk to about organisational matters. The real hubs, the real influencers will emerge from the analysis anyway—other people will point them out. Identifying key individuals in organisations is very much an error-free analysis. At the same time, determining peripheral individuals may be highly inaccurate—this, however, would not influence the description of the organisation.*

AL&GV: Were you able to predict accurately the future applications of network theory at the beginning of your career?

A-LB: *Oh, there were lots of things I was unable to predict at the beginning of my career—scientists' imagination is somewhat limited. I could have never predicted, for example, that, one day, businesses would find our work useful. I would have never thought, to take another example, that, one day, there would be a Facebook that uses our tools. (Other, rather funny applications of our findings explore the relationships among Marvel Comics characters.) I myself got recently involved in a paper I would have never dreamed possible at the beginning of my career on the relationships among the chemical ingredients of food. We try to understand what we like and dislike about food and why the taste of certain foods remains unchanged over time. Fundamentally, after all, chefs face a network problem: how to combine ingredients and what ingredients taste well with others. It is truly amazing, the variety of network science applications, and I always ask* *my students to pick a network and analyse it—their choices are as diverse as illegal downloads from the Internet, bicycle sharing in a city, and the relationships among the grape varieties mixed in Hungarian wines.*

AL&GV: What is the idea behind your new, interactively written network science book? What does interactivity add to this book?

A-LB: *This is a fascinating project and the interactivity issue is just one of its many aspects. Let me explain it briefly. I have dreamed of writing such a network science book for ages. When I finally got my act together, I realised that I cannot write it the way I wrote my previous books—it may take two or three years to finish, and I am too busy to sit down and write it from the beginning to the end. As a result, I decided to release the book on the Internet, chapter by chapter, and making the book interactive on the iPad is only one aspect of this project. I work with a team of designers who enhance the graphics, and every chapter is released as soon as it is ready—three chapters are thus already available on the Internet. Moreover, we are piloting its translation form English to Hungarian in a most unusual way—we have recruited a team of volunteer translators. Hungary was not chosen at random for this pilot—since Hungarian is my mother tongue, I can judge the quality of the translation. Based on this pilot, we may offer the whole world the opportunity to translate this book—a local scientist, student, or indeed anybody else who wants to translate this book will have access to the source file and will receive the software enabling them to add a translation to the crowdsource version.*

AL&GV: In June 2013, you will be plenary speaker at the Fourth Annual Conference of the European Decision Sciences Institute in Budapest, Hungary. How does network research contribute to the decision sciences?

A-LB: *Network science and decision making sciences are very closely linked. We live in a world where everything from business to government is characterised by network governance—or network decision making—and does not rely on any one individual decision maker. To take a decision involves considering many different factors and requires inputs from many different constituents. Therefore, network thinking will have to pervade management research, including decision making research. How this diffusion will actually happen in practice remains to be seen, but, on my part, I hope this plenary speech will contribute to connecting the two.*

AL&GV: Have networks influenced your everyday life?

A-LB: *Similarly to most scientists, I am fundamentally an introvert. Network science has taught me the importance of relationships. I have become much more conscious about being part of a community, about reaching out to others. Network science has not killed my introvert nature—after all, you cannot really change your personality—but it has added a layer of almost professional* *link building ability, as well as the willingness to use this ability not only for my own interest, but also for the interest of the community.*

AL&GV: Is the notion of an introverted network scientist not a paradox—a contradiction in terms, as it were?

A-LB: *Well, the major decisions in my life were network-related too. For more than a decade, for example, I was at the University of Notre Dame, and I really loved my life there. (I still love it, every time I am back there, and my heart sill aches, when I am not there.) Nevertheless, I moved to Boston, because I meet with more individuals relevant to my research there, and I have more collaboration opportunities, than I would at Notre Dame. No matter how hard I would have tried, I could have not had access to such hubs at Notre Dame.*

AL&GV: What is the future of network research?

A-LB: *Network research has never been only about understanding networks per se, but about understanding complex systems—the search for a theory of complex systems is a huge challenge for the scientific community. In the last ten years or so we learned that complex systems—be they social, economic, communication, or biological—rely on very complicated networks. Therefore, to understand complex systems we first need to understand their underlying networks. Eventually, we cannot avoid looking at systems in all their dynamic complexity, including network processes and the interaction between network typology and process dynamics. In network research, the future is a theory of complex systems, a theory of network dynamics—an explanation of how the networks support various interactions, various processes that enable cells to live, economies to flourish, and societies to succeed.*

AL&GV: You started your career in one particular field, theoretical physics—in the intervening years, at least to some extent, you moved away from it, to focus on a very promising methodology that would provide new insights in many other fields. Do you see yourself as a methodologist? Do you suffer from a split professional personality?

A-LB: *I have never seen myself as a methodologist. What really excites me is the discovery of laws and fundamental principles of complex systems. To make a discovery, we often have to develop methodologies, and yes, it is true, most often than not, the different areas that rely on network science use the methodology rather than the fundamental discovery itself. Let me give you an example—to launch rockets into space we need Newton's Law. From the point of view of the rocket launchers, Newton was a methodologist—from my point of view, Newton was a discoverer of laws of physics, not a methodologist. Therefore, more often than not, network scientists like my colleagues and me focus on the discovery rather than the methodology. However, even discovery enthusiasts like me have to admit that discoveries enable rocket launching only if we translate the laws into* *methodologies—an essential step that we ourselves often take, but that has never been our primary motivation.*

AL&GV: Finally, a rather personal question. You have lived significant lengths of time in at least three different countries—where is 'home'?

A-LB: *Having been born in Transylvania and having established a second home in Budapest and a third home in Boston, I obviously care a lot about this issue. (Incidentally, I spend about four months a year in Budapest, primarily to immerse both me and my children in the surrounding Hungarian environment.) I think of myself as having three different homes: my sentimental home is obviously Transylvania, where I come from; my cultural home is Budapest; and, of course, my professional home is Boston.*

AL&GV: Thank you so much for the interview.

References

Barabási, A.-L. (2002). *Linked: The New Science of Networks*. New York: Perseus.

Barabási, A.-L. (2010). *Bursts: The Hidden Pattern Behind Everything We Do*. New York: Dutton.

Barabási, A.-L. and Albert, R. (1999). 'Emergence of Scaling in Random Networks', in *Science*, 286/5439: 509–12.

Barabási, A.-L. and Stanley, H. E. (1995). *Fractal Concepts in Surface Growth*. Cambridge, MA: Cambridge University Press.

Barabási, A.-L., Newmann, M., and Watts, D. (eds) (2006). *The Structure and Dynamics of Networks*. Princeton, NJ: Princeton University Press.

Borgatti, S. P. and Foster, P. C. (2003). 'The Network Paradigm in Organizational Research: A Review and Typology', in *Journal of Management*, 29/6: 991–1014.

Borgatti, S. P. and Halgin, D. S. (2011). 'On Network Theory', in *Organization Science*, at http://orgsci.journal.informs.org/cgi/content/abstract/orsc.1100.0641v1 (accessed 14 February 2013).

Borgatti, S. P., Mehra, A., Brass, D. J., and Labianca, G. (2009). 'Network Analysis in the Social Sciences', in *Science*, 323/5916: 892–95.

Brass, D. J. (2011). 'A Social Network Perspective on Organizational Psychology', in Kozlowski, S. W. J. (ed.), *The Oxford Handbook of Organizational Psychology*, 667–95. New York: Oxford University Press.

Brass, D. J., Galaskiewicz, J., Greve, H. R., and Tsai, W. (2004). 'Taking Stock of Networks and Organizations: A Multilevel Perspective', in *Academy of Management Journal*, 47/6: 795–817.

Chauvet, V., Chollet, B., Soda, G., and Huault, I. (2011). 'The Contribution of Network Research to Managerial Culture and Practice', in *European Management Journal*, 29/5: 321–34.

Goh, K. I., Cusick, M. E., Valle, D., Childs, B., Vidal, M., and Barabási, A.-L. (2007). 'The Human Disease Network', in *Proceedings of the National Academy of Sciences,* 104/14: 8685–90.

Harzing, A. W. (2007). *Publish or Perish,* at http://www.harzing.com/pop.htm (accessed 14 January 2013).

Kilduff, M. and Brass, D. J. (2010). 'Organizational Social Network Research: Core Ideas and Key Debates', in *Academy of Management Annals*, 4/1: 317–57.

Kim, Y., Choi, T. Y., Yan, T., and Dooley, K. (2011). 'Structural Investigation of Supply Networks: A Social Network Analysis Approach', in *Journal of Operations Management*, 29/3: 194–211.

Kirby, J. (2006). 'Viral Marketing', in Kirby, J. and Marsden, P. (eds), *Connected Marketing: The Viral, Buzz and Word of Mouth Revolution*, 87–106. Oxford: Butterworth-Heinemann.

Kiss, C. and Bichler, M. (2008). 'Identification of Influencers—Measuring Influence in Customer Networks', in *Decision Support Systems*, 46/1: 233–53.

Lerner, J., Kenis, P., van Raaij, D., and Brandes, U. (2011). 'Will They Stay or Will They Go? How Network Properties of WebICs Predict Dropout Rates of Valuable Wikipedians', in *European Management Journal*, 29/5: 404–13.

Zaheer, A. and Soda, G. (2009). 'Network Evolution: The Origins of Structural Holes', in *Administrative Science Quarterly,* 54/1: 1–31.

Ágnes Lublóy is an Associate Professor with the Departmemt of Finance at Corvinus University of Budapest. From 2005 to 2007, she was a Junior Fellow and later a Research Fellow with the Institute for Advanced Study at Collegium Budapest. Between 2004 and 2007, Ágnes worked on three distinct research projects related to financial networks at Magyar Nemzeti Bank, the central bank of Hungary.

Ágnes graduated in finance in 2002 from Corvinus University of Budapest, and was awarded her summa cum laude PhD degree there in 2006 for her thesis on the systemic risk implications of the Hungarian interbank market. Her research areas are financial stability, financial networks, telecommunication networks, application of network theory in economics, and networks in healthcare systems.

Ágnes presented over twenty-five research papers at international events such as the Annual Meeting of the European Financial Management Association, the Global Finance Conference, HUNNET, and NetSci. In addition, her research was published in *Hungarian Review of Economics*, *Hungarian Review of Financial Institutions*, *International Journal of Management Cases*, *Journal of Statistical Mechanics*, and the working papers of Magyar Nemzeti Bank.

In 2008, Ágnes was presented with the Young Scientist of the Year Award 2007 by the Faculty of Business Administration at Corvinus University of Budapest—one year earlier, she had been presented with the Teacher of the Year Award 2007 by the students of the Community of European Management Schools (CEMS) programme at the same institution. More recently, in 2012, she and colleagues Gábor Benedek and Gyula Vastag received the Best Application Paper Award of the 3rd Annual Conference of the European Decision Sciences Institute for 'Churn Models at Mobile Providers: Importance of Social Embeddedness'.

In 2011, Ágnes received a two-year post-doctoral fellowship financed by the AXA Research Fund. Her current project—'Network of General Practitioners and Specialists: Profiting from the Knowledge about their Professional Interaction'—investigates the role of socio-demographic and network topological characteristics of doctors in professional interactions between general practitioners and specialists.

Ágnes can be contacted at agnes.lubloy@uni-corvinus.hu, at the Department of Finance, Corvinus University of Budapest.

Gyula Vastag is Professor with the Faculty of Business and Economics, University of Pannonia in Veszprém, Hungary. He served as Managing Director of the Corvinus School of Management at his *alma mater*, Corvinus University, and as Professor and Area Coordinator of Operations and Supply Chain Management at the Central European University (CEU) Business School, both in Budapest, Hungary. In the US, Gyula spent almost two decades on the faculties of Kelley School of Business (Indiana University), Eli Broad Graduate School of Management (Michigan State University), and Kenan-Flagler Business School (University of North Carolina at Chapel Hill). In addition, he was Professor and Dean of Supply Chain Management Programmes at the University of Stuttgart (2000–2001), where he has been a visiting professor ever since. He also held a visiting professorship (part-time) with the University of Groningen in the Netherlands.

Gyula earned his PhD and Doctor of Sciences degrees at (the predecessor of) Corvinus University and the Hungarian Academy of Sciences respectively, and finished his habilitation at Corvinus University.

His areas of interest include global operations and supply chain management, service operations management, and environmental management strategies. A successful and popular instructor, Gyula has developed and taught a wide variety of conventional and unconventional courses and educational programmes, both in business schools and for corporations—such as for the Kelley Direct Online MBA Program (Indiana University) and the action-learning programme for the executives of the largest bank in Central and Eastern Europe.

Gyula co-authored two books, wrote eight business cases, and contributed chapters to 15 books. He published over thirty peer-reviewed journal articles, in the US and Europe, and numerous papers in conference proceedings. The h-index of his publications in Harzing's *Publish or Perish* (based on over 1,000 citations) is 15 (as of 14 October 2012). His work on the competitiveness of metropolitan areas has generated interest outside academic circles, and his cases on Sonoco's take-back policy were selected by CaseNet® as two of the six e-link cases for the seventh edition of Meiners, Ringleb, and Edwards' widely used *Legal Environment of Business*.

Gyula has cooperated and consulted with a large number of organisations, including the Aluminum Company of America (Alcoa), the Carlson School of Management at the University of Minnesota, the Global TransPark Authority of North Carolina, the US Federal Aviation Administration, and the North Carolina State University, in the US; the International Institute of Applied Systems Analysis, in Austria; ESSEC-Mannheim Business School, in Germany; Knorr-Bremse Hungary and the OTP Bank, in Hungary; and the International Institute for Management Development (IMD) and the University of St. Gallen, in Switzerland.

Gyula is Founding Member of the Executive Board of the European Decision Sciences Institute (EDSI) and the European Regionally Elected Vice-President (2010–2014) of DSI, where he is also Member of the Development Committee for Excellence in the Decision Sciences and Chair of the Member Services Committee (2011–2012). He is Founding Member of the Global Manufacturing Research Group, where he also served as Associate Director. In addition, Gyula served on the Executive Committee of the International Society for Inventory Research in 1998 and 2006, and he is currently Member of its Auditing Committee.

Gyula can be contacted at gyula.vastag@gtk.uni-pannon.hu, at the Department of Management, Faculty of Business and Economics, University of Pannonia.