

ZOLTÁN KOVÁCS AND ZOLTÁN SZEGEDI

‘Hey, Junior, this is not the way to do it!’ Passionate about chemistry, and everything else: Dr. István Blazsek, Chief Executive Officer of Nitrogénművek Zrt.¹²

There are very few centennial companies in Hungary. Two world wars (1914–18 and 1939–45), nationalisation (1945–8), revolution (1956), and political and economic overhaul (1989) marred the country, in the Twentieth Century, with profound consequences for business. Today, the majority of Hungarian companies are 20–25 years old, at most.

However, there are exceptions. While hundreds of businesses have come and gone, Nitrogénművek Zrt. has more than just survived—it has played a prominent role in the Hungarian chemical industry. For over eighty years now, the Company has contributed to increasing productivity in agriculture, and has provided employment not only for generations of inhabitants living at the foot of the Bakony Hills, but also for an entire chain of supply and distribution.

In 1931, when it was first established on the dolomite fields surrounding Pétfürdő and with water from the Creek Pét, Nitrogénművek represented a pioneering venture for the Hungarian heavy industry. In 1932, the modern—by the then standards—chemical plant started to produce chemicals and nitrogenous fertilisers. Since then, the Company has invested in numerous technological innovations, added new plants, and survived the devastations of World War II, the ad hoc policies of Socialist industrial development, and the difficulties of switching to a new economic system in 1989. Although the journey between then and now has been far from smooth, the company known today by the name of Nitrogénművek Zrt. is a major, strategic player in the overall Hungarian economy.

The creation of a heavy chemical industry was the cornerstone of the 1920s industrialisation programme in Hungary. Building the Pét Plant was needed both by the military, to secure a continuous supply of nitric acid for gunpowder production, and in agriculture, to secure yield-improving fertilisers. Of the various technological options, synthesising—and then further processing—ammonia by chemically bonding nitrogen with hydrogen seemed the most economic solution. Producing hydrogen with any of the technologies available in Europe at the time

¹ Nitrogen Works Co. Ltd, in translation.

² This article was translated from Hungarian by Gyula Vastag.

was not sufficiently viable in Hungary, and a new technology was developed, using lignite from neighbouring Várpalota.

In 1928, when it decided to establish a nitric plant, the Cabinet Council of Hungary changed the life of a sleepy small provincial town for ever. With the construction of the new plant, Pétfürdő began to develop rapidly. In time, the Cabinet Council's choice of location has been confirmed several times over, since all the main production ingredients are local—lignite for synthesis from neighbouring Várpalota; limestone for fertilisers from Bakony, just a couple of kilometres away; and water from the Creek Pét in Sárret, in sufficient quantities and adequate qualities. In addition, the Székesfehérvár–Veszprém railway line inaugurated in 1872 has facilitated transport from the very start.

The two plants—one for ammonia and the other for fertiliser—were built next to each other and started production in 1932, with Egypt as the Company's main export market. By the end of the 1930s, Pétfürdő had become a flourishing town, with modern residential districts for employees, including casino and swimming pool.

In time, the two plants merged, the production capacity increased, and the range of products extended in new and unexpected directions by modern standards—gases for military use, as part of the Hungarian armament programme of the time. As a potential centre for the Hungarian military industry, the factory was a top target for the Allied bombing campaigns. In the end, despite surviving several bombing raids, both factory and town were all but annihilated—the ammonia and fertiliser plants were completely destroyed, and almost all buildings were left in ruins. Just as the rebuilding efforts were under way, the Germans took over, blew off the remaining buildings, and destroyed the gas production capacity. Although their attempt to ship the remaining machines and equipment to Germany was sabotaged, the birthplace of the Hungarian nitrogen industry was all but destroyed.

A quick, partial reconstruction of the plants in the immediate aftermath of World War II allowed production to restart as early as 1946. For Péti, its flagship product (a nitrogen fertiliser lovingly named after its place of birth), the Company imported ammonia nitrate from the Soviet Union until 1948, when full reconstruction was completed. With all the technological processes from raw material supply to final product delivery fully automated, the new fertiliser plant was a world pioneer. In addition, by 1956, the production capacity had reached 100 tonnes of ammonia per day.

The Hungarian fertiliser industry in general and Péti Nitrogén Műtrágyagyár—as it was then called—in particular were among the first to be hit by the crisis of the socialist system, despite the Company's outstanding past achievements. Sales of fertilisers were down, while the energy crisis was driving the price of natural gas—the most important raw material in the industry—higher and higher. In the

end, the Government's policy of pushing sales to non-socialist countries in return for hard currency backfired.

In the turbulent aftermath of the regime change that took place at the end of the 1980s, the new, democratic Government could not resuscitate the Company. After an unsuccessful attempt at reorganisation, the Government ordered its liquidation, without appointing a legal successor. Consequently, a new Nitrogénművek—formed in 1990—focused on crisis management during its first several years of operation. Debts were consolidated gradually and increasing investments were made in technology, energy efficiency, and environmental protection. In addition, in 2002, a group of private individuals acquired the Company shares. This virtual rebirth of the Company was a true turning point in its long and convoluted history, which led to a new wave of optimism about the future. Additional plants and technologies and—more importantly—new and bold strategies fuelled this optimism. The new Nitrogénművek Zrt. invested around EUR 100 million into new developments that propelled it once more to the very top—no comparable investments were made anywhere else in the European fertiliser industry in the last years.

In the 2000s, Nitrogénművek Zrt. founded subsidiaries in Serbia, Romania, Slovakia, Germany, and Italy and focused on marketing and fertiliser expertise. Every year between 2008 and 2011, the Company was awarded the Business Superbrands Award³. In 2009, to establish a direct link between production and end users, the Company created GENEZIS, a new selling organisation.

As for the future, the Company plans to increase its production capacity for ammonia (from 1,400 tonnes per day to 1,650 tonnes), nitric acid (up to 1,800 tonnes per day), and nitrate fertilisers.

Dr. István Blazsek has worked for Nitrogénművek Zrt. for over forty years, including—since 2006—as the Company's Chief Executive Officer (CEO). He joined the Company in 1971, on graduation as a chemical engineer from the University of Veszprém (currently, University of Pannonia).

During his distinguished career, István has held numerous other positions with the Company—technologist, shift engineer, deputy shop floor foreman, shop floor manager, deputy plant manager, plant group manager, factory manager, and, between 1992 and 2006, Chief Operating Officer. This exposure to the ins and outs of the Company—and, implicitly, of the industry as a whole—has



³ <http://www.superbrands.com>.

allowed István the kind of extensive knowledge and comprehensive understanding that his current position as CEO of Nitrogénművek Zrt. require.

An Honorary Professor with the University of Pannonia since 1993, István is an ardent supporter of education in general and adult education in particular. He serves as a living example himself, having furthered his education through numerous study and training programmes. He was awarded his PhD from the University of Chemical Engineering in Veszprém in 1988 and his MSc in industrial economics from the University of Economic Science in Budapest in 1991.

István's international reputation as an outstanding chemical expert has led to his election as President of the Hungarian Chemical Industry Association in Budapest and of the Technical Committee of Fertilizers in Brussels. Such highly praised national and international accolades have made István more determined than ever before to place his extensive expertise and countless achievements in the immediate service of his local community—to this end, he is currently Vice-president of the Chamber of Commerce and Industry of the Veszprém County.

As an active witness of four decades of Company history, Dr. István Blazsek is best placed to further understanding of Nitrogénművek Zrt.—the illuminating interview below took place in Veszprém on 7 June 2013.

ZK&ZSz: Dr. Blazsek, you have spent your entire professional career with Nitrogénművek Zrt., you have climbed the proverbial corporate ladder, and you have accumulated not just years, but decades of management experience. What has first attracted you to the Company?

IB: *Looking back over the years, my lasting passion for Nitrogénművek seems to have been inevitable—like all great passions in life indeed are. A combination of chance, choice, and coincidence, at the most. I graduated in chemical engineering from the University of Veszprém (currently, University of Pannonia) in 1971, having specialised in process control. There was a high-priority state investment in Pétfürdő, at the time, and the Company was looking for engineers. This is how it all started—yes, it was as simple as that—and for the first 20 years of my career I worked in various production capacities.*

ZK&ZSz: You started out as a junior chemical engineer, but you were soon entrusted with managerial responsibilities. What were the greatest challenges you faced in your new capacity?

IB: *In the 1970s, Nitrogénművek was very different from today. In those days, for example, human resource management in general and succession planning in particular were very different. There were functions, employees for every function, and succession plans for every employee. In very practical terms, this meant that we learned the profession from our more senior—and more experienced—colleagues. In 1974, for example, I was placed in the Ammonia Plant, first as a trainee shift leader, and worked with English and American operators on installing*

a new technology. Most of my colleagues on this project have retired since then, but we recall those days with great fondness, whenever we get together, as if they were a second university education.

ZK&ZSz: What kind of people do you like to work with?

IB: *I love talented and honest people. In a company—and, quite probably, this is also true for universities—you need people who can carry the piano, so to speak, and you need people who can play the piano too. In other words, in a company like ours, you need the right mix of blue-collar workers, skilled technicians, and engineers. If any of these groups is missing, the system is not working properly. Pétfürdő is a small town with tremendous workplace loyalty—our current employees are the third and fourth generations of descendents, the grandchildren and great-grandchildren of the employees who first started with the Company. (Then again, the Company is also employing the third and fourth production technologies since it first started.) We are very fortunate to work with families of employees and very proud of their loyalty. For many of our employees, this is their first and only workplace until retirement, resulting in excellent mastery of the company specifics, at the expense—perhaps—of a wider view of the world.*

ZK&ZSz: How then did you avoid this pitfall in your own career?

IB: *You can learn management the same way you learn finance or any other subject—or anything else in life, for that matter. I started as a shift engineer at the age of 27 and had to manage people—some of whom were my father's age. Of course, I did get the occasional slap in the face in the form of 'Hey, Junior, this is not the way to do it—reset me the old stager!'*

Being appointed to a new position every five or six years was an opportunity not only to apply what I have learned managerially and professionally since my previous appointment, but also an excellent learning opportunity.

ZK&ZSz: Is it possible to be a good manager without being an expert in any particular technical field?

IB: *I think a good manager needs to maintain some kind of balance between technical knowledge and managerial knowledge. If either is missing, the manager either cannot manage at all or cannot manage well. After 1989, for instance, engineering was no longer sufficient by itself—therefore, it was essential to acquire the necessary financial, economic, and legal knowledge. Between 1989 and 1991, I attended Corvinus University of Budapest as a part-time postgraduate student in industrial management. For many years after my graduation as a chemical engineer in 1971, I was reluctant to pursue further studies in economics. Similar courses I took in the past—such as the political economy of capitalism and the political economy of socialism, for example—have put me off. However, at Corvinus, capable instructors were teaching social sciences in a way that was both useful and enjoyable for engineering students. It was there that I learned the basics, including the necessary terminology (such as contribution margin, for*

example, and debit and credit) and—most importantly—an approach to analysing business problems. Nowadays, I know what is behind the numbers, if I look at a balance sheet.

ZK&ZSz: The Faculty of Business and Economics at the University of Pannonia educates managers. What competences do you think our graduates should possess?

IB: *Managers have to know their speciality inside out—be it chemistry, mechanical engineering, automation, or other fields of production. Learning the foundations of engineering first is paramount—the company specifics will be learned later, on the job.*

ZK&ZSz: Your products are well-known, nationally and internationally. How big is the current fertiliser market? How is it segmented?

IB: *We produce nitrogen-based fertilisers, with nitrogen as the active substance—other, so-called complex, fertilisers use phosphor or potassium as agents. In Hungary, the total fertiliser market is around 1.5 million tonnes—of these, 1.2–1.3 tonnes are nitrogen-based and 0.2–0.3 tonnes are complex. At 1 million tonnes, our current production capacity is smaller than the domestic demand. In practice, however, we meet around two-thirds of the domestic demand and export one-third of our production capacity.*

ZK&ZSz: Your Company is a commodity chemical plant with specialised technologies for given products. What is your freedom of decision making?

IB: *We have five high-capacity plants in Hungary, each with a production capacity of 200–300 thousand tonnes—MOL⁴, TVK⁵, and BorsodChem⁶ have similar high-capacity facilities. Our products serve basic, general needs. We could manufacture more specialised products, but there is no demand for them in Hungary. We have around 10–15 per cent freedom of decision making, meaning that the combination of raw materials, market demand, and financial options allows us to change our product mix by around 10–15 per cent. We can cut back our production by 20–30 per cent, if we cannot sell our products profitably due to demand constraints. However, in the long run, this level of capacity utilisation is unprofitable—utilisation needs to be above 80 per cent, for our high-capacity plants to be profitable. By the way, this is the explanation behind the recent problems in the oil industry. Usage of petrol and diesel oil declined by 20–25 per cent, and plants are not efficient below 80 per cent utilisation. We were very fortunate, in the last two–three years—demand for our products increased and we*

⁴ Leading Hungarian oil and gas company, listed on the Budapest Stock Exchange, with a capitalisation of USD 10 billion.

⁵ Leading Hungarian petrochemical company.

⁶ Leading Hungarian chemical company.

sold our full production. Our operations are profitable when the capacity utilisation is higher than 90–95 per cent.

ZK&ZSz: How do you achieve continuous improvement, and what areas do you target?

IB: *Technologies are changing constantly. As I said before, we are practically operating third- and fourth-generation plants—our Company underwent three or four technological changes since it first started. I am very fortunate in that the first- and second-generation technologies were still around, when I was a young apprentice in the late 1960s—nowadays, we have two fourth-generation plants. We achieve technological modernisation in two ways—by upgrading or by revamping. Upgrading a third-generation plant to a fourth-generation plant, for example, involves a major, one-time technological investment—such investments happen very rarely. Revamping—to increase plant capacity and / or reduce energy and material consumption in some evolutionary ways—involves adding new technological units and replacing or eliminating production bottlenecks. We aim to increase our capacity by 20–25 per cent, in the next two years, and revamping is the most cost-efficient solution in terms of return on investment.*

ZK&ZSz: How do you differentiate your Company from other companies with similar profiles? What specific competences allow you competitive advantage?

IB: *If you hold our products in one hand and the products of our competition in the other, you will hardly see any difference, especially if you are a layperson—it would be very much like looking at granulated sugar produced by two different manufacturers. The granules may look slightly different and the colours may look slightly different, but, overall, there is not much of a difference. However, it is an altogether different story for an agronomist.*

Given a certain technology, the chemical composition of fertilisers is more or less constant—it can only change within limits. Nonetheless, while indeed very similar to one another in their chemical composition, fertilisers have important differentiating characteristics. Just to name a few:

- Granule size uniformity allows fertiliser spread uniformity—spreading fertiliser in the fields relies on the centrifugal force of the machines, and some areas would be spread with more fertiliser than others, if the granules varied in size.

- Low moisture content allows long-term fertiliser storage—the granules will not stick together.

- Five or six other differentiating characteristics are manufacturer specific. Péti só, our key product, is a mixture of ammonium nitrate and ground dolomite and varies not only in name, from country to country, but also in additive—ammonium nitrate can be mixed with dolomite as well as calcium carbonate or other minerals. Additives are important because ammonium nitrate becomes acidic in contact with the ground moisture and can be used only in calcic soils, which are rare in

Hungary. *Pétisó* is an excellent product for neutral soils and low-level acidity soils, and works well in this country. For *Pétisó*, the particular type of dolomite we use is the differentiating factor.

I should probably add here that Nitrogénművek's location remains ideal for cost efficiency. In 1931, forward-thinking engineers designed the plant five kilometres from the dolomite fields. (This is one of the reasons why Russian manufacturers of ammonium nitrate and calcium fertilisers cannot compete with us—their dolomite mines are 500–1,000 kilometres away and their transportation costs are high.) Neighbouring Várpalota continues to source our lignite. The Creek *Pét* used to supply abundant quantities of water for production. By fortunate—and overwhelmingly important—coincidence, our Company is located at the foot of the Bakony Hills, and the pollutants from the production process do not affect the springs of karst water.

ZK&ZSz: Typically, chemistry is associated with laboratories—and, traditionally, the chemical industry with research and development (R&D)-intensive new products and technologies. What is the emphasis of your R&D activity?

IB: There was a significant R&D activity prior to 1989. Then, due to lack of resources, the research department was closed, only to reopen in 2006. Nowadays, most of our developments are tailored to outside orders. We concentrate on applied research—without pursuing basic research—and seek to expand our product range and improve the application efficiency of our products.

We cooperate with 12 agronomic institutes, which undertake research on our behalf under our supervision. For product and technology development, we also collaborate with technical universities—such as the University of Pannonia and the Budapest Technical University, for example. For process and environmental protection development, we work with many foreign partners. Since we do not pursue basic research ourselves, we frequently buy know-how and licenses.

Innovation support is insufficient in Hungary—consequently, for example, it is impossible to develop plans and design a new nitrate plant every twenty years or so, as we should. Instead, we buy the basic design from overseas, commission the construction plans from Hungarian partners, and Hungarian companies carry out the construction under supervision from foreign expertise.

ZK&ZSz: One of the most sensitive questions these days is connected with the contrast between chemical solutions and organic solutions. What is your take on this issue? Is it true that the bottom line is the trade-off between efficiency, on the one hand, and environmental and health protection, on the other?

IB: Organic crops would be ideal, were it not for the fact that they could only feed a tiny proportion of the world's population. Contrary to some beliefs, our fertilisers are neither poisonous nor carcinogen. Our basic materials are the hydrogen extracted from hydrocarbon and the nitrogen extracted from air. We

synthesise materials that already exist in nature—fertilisers only supplement the nutrients in the soil. Although it has already been proved that the current world population could not be sustained without fertilisers, it is important to develop pollutant- and heavy metal-free fertilisers.

ZK&ZSz: Your Company is part of a supply chain with an enormous material flow. How does one coordinate such a supply chain, and does Nitrogénművek play a major role in its coordination?

IB: *Although fertiliser usage is seasonal, fertiliser production needs to be continuous, due to efficiency considerations. This continuity may be disrupted for two reasons—unexpected repair work and, every two years, planned maintenance work. In Hungary, fertiliser consumption is ‘active’—going from producer directly to consumer—from February to May and from September to early November. At all other times, we produce to stock. Pétió and urea are stored in bulk, in warehouses, while ammonium nitrate is stored outdoors, in bags or large bags of 1,000 kilogrammes or more—in turn, stored in standardised-load packs. Our storing capacity is one-fourth of our production capacity. Due to demand seasonality and prices akin to a sinus curve, the financial liquidity of the Company is secured through export activity, not always profitably. Energy costs have the greatest impact on our entire supply chain costs, which uses 90 per cent natural gas and 10 per cent electricity. We purchase natural gas on the Austrian Exchange and electricity from Hungary.*

ZK&ZSz: What is the secret behind the Company’s sustained success?

IB: *Well, ‘the secret’ is not at all secret, I do not think—we rely on advanced technology, employee commitment, and a strong company culture. Nitrogénművek is a privately owned, family-owned company, since 2002, with owners very much committed to innovation.*

ZK&ZSz: How did you manage to survive the crisis?

IB: *In 2008–9, when the market collapsed, we experienced major difficulties—we just could not sell our products. We had to close down for a whole four months—yes, the situation was as bad as that—and undertake general maintenance, to minimise losses, and sell inventory, to minimise costs. We had run out of inventory, by spring 2009, when we managed to secure financing and restart production. Times have been good, since then, and 2011–12 was a particularly good season. Moreover, we self-financed our operations—including our financial stability and investments—without any major bank loan.*

ZK&ZSz: How far do your plans for the future go?

IB: *We plan our sales 15–20 years ahead of time, and our business and strategic plans extend to 2020. The European Fertilizer Manufacturers Association (EFMA) predicts stagnating sales in Western Europe, for the next decade, and only 2–3 per cent increases in Central and Eastern European sales. We shall of course export any production surplus—to increase capacity and reduce*

energy consumption, the Company owners have already decided on new investments.

ZK&ZSz: The academic literature emphasises the role of strategic alliances—what role do strategic alliances play for your Company?

IB: *Rightly or wrongly, sales networks raise suspicions and the Hungarian Competition Authority (HCA) is very wary of cartels and unfair and restrictive market practices. Since we hold two-thirds of the Hungarian market, HCA have audited us several times.*

Since Nitrogénművek is a family-owned company—and since competition on the fertiliser market is brutal—there are no alliances on the producer side. On the supplier side, we always buy electricity from the cheapest supplier and natural gas from an average of 12 (of around 20) suppliers, on a monthly basis. We have excellent relations with our suppliers—they trust us because they know that natural gas is of vital importance for us and we need it not just this week, as it were, but next week too. As far as engineering developments are concerned, we would welcome more key players on the market, since we are at the mercy of a few companies in an oligopolistic position.

ZK&ZSz: Dr. Blazsek, thank you very much for the interview.

Bibliography

Nitrogénművek Zrt. (2013). *The 80 Years of Nitrogénművek*, at http://www.nitrogen.hu/nat/index.php?option=com_content&view=article&id=359&Itemid=76&lang=en (accessed 22 August 2013).

Zoltán Kovács is Professor with the Faculty of Business and Economics at the University of Pannonia in Veszprém, Hungary, where he has served as Director of the Center for Continuing Education, Director of the Institute of Economics, and Dean of the Faculty of Economics (the current Faculty of Business and Economics). At present, he is Head of the Department of Supply Chain Management.



Zoltán started his career in the meat industry—where he worked as Head of the Quality Control Laboratory and was involved in new product development—and in

the coalmining industry—where he coordinated large-scale projects, including the establishment of computer centres and implementation of information systems.

Zoltán received his MSc in Industrial Engineering from the University of Pannonia, in 1980, and his PhD from the Budapest University of Technology and Economics. He was awarded a PhD degree by the Hungarian Academy of Sciences, in 1991, and a six-month Fulbright Scholarship, in 1993–4, which he took at the University of Wisconsin-Madison in the US.

Zoltán has developed and taught a wide variety of conventional and unconventional courses. His educational innovations include optical character recognition (OCR)-based test evaluations, spreadsheet-based problem generation for compulsory basic training (CBT) test banks, using video case studies, recording classroom work from tablet screens, and virtual classroom-based consultations. In 2001–10, he taught the Business Simulation course at the University of Technology in Darmstadt, Germany. Currently, he teaches Production and Service Management, Logistics, and Business Simulation, (to fulltime and part-time students), as well as Safety and Risk Management (to continuing education students).

In addition to three MBAs, Zoltán has developed a number of other educational programmes—for example, HR Manager, Leadership and Management, Logistics Management, Technical Manager, and the Quality Professional Degree. He directs three programmes, at present, the BSc in Industrial Engineering, the MSc in Logistics Management, and—in continuing education—the Quality Professional Degree.

Zoltán's research interests are production and service management, logistics, and maintenance. He is founding member of the Logistics Committee of the Hungarian Academy of Sciences, founding President of the Logistics Committee of the Hungarian Academy of Sciences Regional Committee, and founding board member of Lean Enterprise Institute Hungary and the Association of Maintenance Professionals. Zoltán wrote two books (*Production and Service Management* and *Logistics*) and co-authored a third (*Reliability and Maintenance*), contributed chapters to ten other books, and co-authored more than ten textbooks. In addition, he published over twenty peer-reviewed journal articles and numerous papers in conference proceedings.

Zoltán's business simulation software is available in 15 European languages, and he uses statistical methods and Monte Carlo simulation to carry out extensive reliability and risk analyses for industrial companies. As a business consultant, his clients have included Continental Teves, General Electric, Herend Porcelain Manufactory, Maxon Motors, and Paks Nuclear Power Plant, as well as the Nagykanizsa local government.

Zoltán can be contacted at kovacs@gtk.uni-pannon.hu, at the Department of Supply Chain Management, Faculty of Business and Economics, University of Pannonia.

Zoltán Szegedi is Professor (Logistics Management) with the Faculty of Business and Economics at the University of Pannonia in Veszprém, Hungary, and member of the Doctoral School of Management and Organisation. He also works as a management consultant for Ameropa Training & Consulting Kft., a company focussing on the strategy and process management of logistics and supply chain management.

Zoltán was educated in Dresden, Germany, where he received his MSc as Diplom Ingenieur-Ökonom at the Hochschule für Verkehrswesen Friedrich List, and he earned his PhD in Business Administration at the Hungarian Academy of Sciences. In the early 1990s, Zoltán attended the Advanced Management Program (AMP) at the Harvard Business School in Boston, Massachusetts, and his habilitation at Szent István University followed less than ten years later.

Zoltán's research focuses on supply chain design and strategy and the logistics of small- and medium-sized enterprises (SMEs). He is a dedicated ensign for the case study method, and his case studies and case study collections are used extensively—this is particularly true for his *Case Studies of Logistics Management*, which was translated in English.

Zoltán has authored and co-authored 12 books and over one hundred articles, and he has served on the editorial boards of Hungarian and international journals—such as the *International Journal of Procurement Management*, for example.

Prior to joining the University of Pannonia, Zoltán was on the faculties of Corvinus University of Budapest, International Management Center, and Szent István University, where he developed logistics management subjects and curricula and designed BA, MSc, and PhD programmes with majors in logistics management, supply chain management, inventory control, e-business, and others.

Zoltán was a visiting professor with the Cooperative University in Baden Württemberg, Germany; the Normandy Business School in LeHavre, France; and, in Canada, the Wilfrid Laurier University in Waterloo, Ontario, and the University of British Columbia in Vancouver, British Columbia.

Zoltán has served as Chair and Co-Chair of the Logistics Section of the Hungarian Economic Association, and he has held numerous management



positions in higher education—for example, as founding Director of the joint WeSt (Webster University–Szent István University) MBA Program; as Associate Dean of the Faculty of Business Administration and Director of the Council of European Management Schools (CEMS) Program at Corvinus University of Budapest; and as Director of International Affairs and Marketing at the International Management Center.

Zoltán can be contacted at szegedi@gtk.uni-pannon.hu, at the Department of Supply Chain Management, Faculty of Business and Economics, University of Pannonia.